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# AMERICAN NURSERYMAN

*The Nurseryman's Forte: To Make America More Beautiful and Fruitful*

OCTOBER 1, 1945



Ceanothus Pallidus Roseus

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# AMERICAN NURSERYMAN

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*The Nurseryman's Forte: To Make America More Beautiful and Fruitful*

VOL. LXXXII, No. 7

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# AMERICAN NURSERYMAN

F. R. KILNER, Editor

## Editorial

### CONSUMER DEMAND.

Most of the factors bearing on the volume of nursery business in the season ahead, as outlined in this column in the preceding issue, are recognized as indicating increased activity, taking the industry as a whole. Labor has not been sufficient during the current year to increase production greatly, and the early fall wholesale lists indicate a shorter supply of ornamental items, though some of the fruits and berry plants seem to be in adequate supply. In the few weeks since the end of war in the Pacific, there has been some improvement in the labor supply, but the situation is not much easier; by spring the number of returned veterans should be sufficient to help the situation of landscape firms, nursery salesyards, agency firms and growers—the firms in the industry which have been most adversely affected by the war and which consequently expect the greatest improvement in business volume. The mail-order nurseries, which reaped a harvest in the past two or three years, are optimistic for the most part, but cautious ones wonder if the record volume of the past season can be continued.

Consumer demand is a product of mass activity, which is difficult to measure and difficult to forecast as even a short memory will testify. That subtle sentiment which sways buying country-wide apparently can change in a short period of time. The best guess as to its direction and extent is made by studying the influences that are at work.

Most feared was an extraordinary reduction in consumer income when the high wages and overtime pay that swelled the pocketbooks of war workers ceased altogether. To offset that influence, the War Labor Board almost overnight removed the restrictions on wage raises, save only where they might be used by the employer as a basis for higher prices. In consequence, the white collar workers and many other classes of employees whose wages and salaries were frozen at prewar levels are receiving belated increases in pay. More than that, some large corporations are proposing pay increases, throughout their organizations, office and factory, in order to offset at least partially the reduction in take-home pay that

might otherwise occur with the cessation of overtime. Most publicized has been the case of Standard Oil Co., which proposed to increase wages fifteen per cent to its employees, without any increase in prices. The example has been followed widely.

The administration has in other ways sought to increase the buying power of the nation, or at least to prevent a great fall from the wartime wage level. Asserting that a vigorous economy demands that wages increase in relation to prices, William Davis, director of the Office of Economic Stabilization, last month reiterated Secretary of the Treasury Fred Vinson's objective of a fifty per cent increase in the standard of living, a goal to be attained in the next five years. Some of the legislation suggested to Congress by the President has the objective of raising the income level of the masses of the public.

Frankly stated, the general tendency on the part of government and prominent industrialists alike is to recognize the necessity of more than a little inflation—though they dodge the issue by insisting that prices be kept down while wages go up, a temporary expedient—in order that this country will be able to support a tax structure which will meet the augmented expenses of government and interest payment on the vast federal debt.

This inflationary tendency is only threatened by possibility of a reconversion slump in production and employment. Such a slump, if it occurs during the autumn or winter, will be shortlived, according to economists' predictions. Such a recession would be fundamentally different from a true depression, and adjustments would be made quickly because of the tremendous savings in the hands of the public and the shortage of almost all the civilian merchandise the public is waiting to buy.

Any forecast of business at this time depends upon the extent of co-operation by labor leaders, industrialists and government heads in restoring full peacetime production and employment as rapidly as possible. Threats of industrial upset by labor leaders seeking unprecedented wage increases, or obdurate opposition by large employers to reasonable adjustment of wage scales, or lethargy on the part of the government in reconciling the issues, might produce a stalemate which would set back busi-

ness activity for the time being. But public opinion, in the face of enormous wants for civilian merchandise, is likely to be so vigorously expressed as to limit the period of such a setback. The possible effect of such a condition of business, if prolonged, must be given consideration. It will defer, rather than change, the consumer demand for nursery stock.

Another summer there is no doubt that the new automobiles and vacation travel will lure many persons from their victory gardens. But those gardeners only grew vegetables and a few flowers from seeds, anyway. There will be more week-end leisure for factory and office workers, affording them more time to maintain their home grounds. Returned servicemen will restore the upkeep of many more homes. The old-time customers of landscape firms and neighborhood nurseries have orders already placed or are waiting to proffer them.

The present trend in the wage structure and the return to home life are favorable factors in regard to consumer demand so far as nursery stock is concerned. There will be more competition, from without the industry and between groups within it. Those who are only order-takers may not see a situation like last spring. Those who put forth the sales efforts of normal times should be well rewarded.

### KIND DEED WINS NOTICE.

How his competitors restocked the nursery of William Hallicy, Clifton Nursery, Clifton, N. J., was told in the preceding issue. When he returned after two years in service, he saw a long, hard period ahead because all the stock in his nursery had been ruined by fire in his absence. But a score of his competitors brought fifteen trucks loaded with nursery stock and planted it in his 4-acre tract, August 23.

An account was carried in the Passaic Herald-News August 24, with a picture of the nurserymen who delivered the stock. New York city papers printed reports and editorials on the kind deed, and other newspapers across the country commented on the unusual story.

Sunday afternoon, September 16, when a gala program of radio features was presented on the air, "We the People" offered this incident, and Bill Hallicy's voice was heard in the interview from coast to coast.



# Viruses and Cherry Rootstocks

By E. M. Hildebrand

Abnormalities of a nonlethal character, until recently of unknown origin, have been present in cherry orchards in the central and north-eastern United States for over twenty-five years. About nine years ago one of these abnormalities, cherry yellows, was definitely found in and traced to the nurseries. Still more recently, in 1940, Keitt and Clayton reported its true cause to be a virus.

In cherries it is becoming increasingly evident that most abnormalities in growth vitality and in foliage and stem character are caused by viruses. An unusual case is that of a virus-induced, large-fruited strain of Montmorency cherry being unwittingly propagated by one nursery because of its large fruit. The propagation of the once promising Chase cherry has recently been abandoned because it had ceased to be a productive variety and a thrifty grower, because all budwood material now available is practically 100 per cent contaminated with the yellows virus.

In an attempt to find the sources of infection, careful surveys have been made of nursery plantings over a period of years. In the first year, these surveys revealed a small number of plantings where the incidence of the cherry yellows virus, for example, ranged from ten to fifty per cent in the Montmorency and Early Richmond varieties. In all these cases the budwood had been taken directly from infected orchards.

Ordinarily the cherry virus diseases have attracted attention in the past only in orchards associated with winter injury. Careful studies of orchard plantings over a period of ten years have revealed extreme cases where cherry yellows had affected as high as ninety per cent of the trees. The high incidence of infections in nurseries has occurred only when scions were taken indiscriminately from orchards for budwood. On the whole, however, the number of trees showing virus disease symptoms in the nurseries has been small, which points to the orchards as a greater potential source of the viruses. The above observations suggest that the viruses have their source or origin in, or in close proximity to, orchards. To eliminate this potential source of virus, the nurserymen have been instructed through the horticultural inspection service that it is unwise to have nursery trees propagated from trees in orchards where abnormalities exist, unless the

materials used were first indexed and certified as virus-free by qualified workers.

As the result of the demonstration of the virus nature of certain of the abnormalities in cherries, improved horticultural inspection and certification regulations of nurseries have been adopted and put into effect by several states. Bearing in mind the dual scion-stock nature of the propagation problem, it cannot be too strongly emphasized that to date the work has been done primarily on the scion or budwood phase, with that of the rootstock being practically neglected.

Today both nurserymen and cherry growers are becoming more virus-disease conscious. Consequently they have developed the desire for virus-free trees now or as soon as this is feasible. Because virus-free scions or budwood and rootstocks or seedlings are not as yet available, but are only in the process of development, and the initiation and maintenance of the necessary foundation plantings for supplying the needs of the nurserymen are as yet far from realization, this paper has been prepared to give the present status of the work.

## The Propagation Problem.

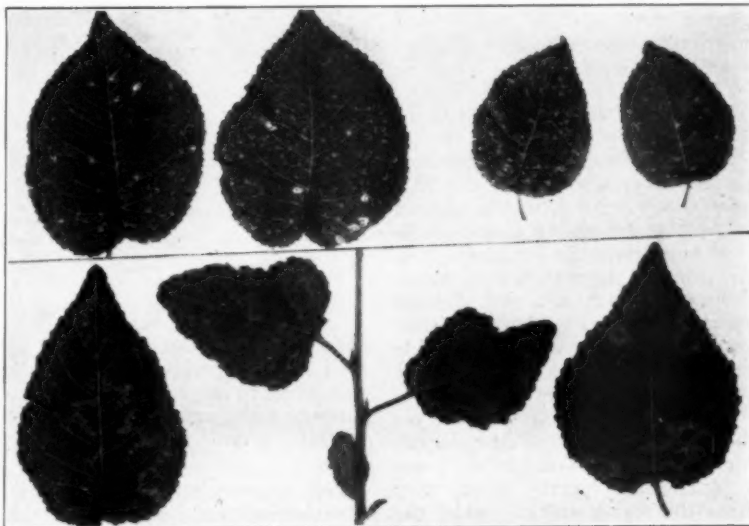
The dual nature of propagation involves the procurement for the trade of the most suitable trees from

available scion and rootstock materials. Obtaining scions or budwood is usually a local problem, with definite clonal lines being regularly maintained. In strong contrast to this the rootstocks (seeds or seedlings) are largely an interstate problem, with the bulk coming from restricted localities in three states.

## Scions or Budwood.

Nurserymen have been constantly on the alert for new and improved strains of cherries. Not infrequently in the past they have gone to the better orchards searching for new propagation strains and obtaining budwood. In doing this, just as in the cases where the growers themselves provided the scions, viruses have been inadvertently introduced into the nurseries. Obtaining disease-free scions or budwood is beginning to be achieved through the cooperation of horticultural inspectors with pathologists at the experiment stations. With good indexing techniques being developed for viruses, it should soon be possible for horticulturists in cooperation with pathologists, nurserymen and fruit growers to attain a better definition of growth types or strains of cherries, their relation to yields and quality of fruit and their susceptibility or resistance to disease.

The writer has made casual observations which detected three growth



Virus Symptoms on the Mahaleb Rootstock.

Above: Stipple spot chlorosis and necrotic spot, photographed by transmitted light. Below: Chlorotic line-pattern or ringspot, invisible by transmitted light, but showing well by reflected light.

types of Montmorency cherry, upright, weeping and intermediate. Growers much prefer the weeping type because of greater ease in spraying and picking, yet practically nothing has been done on the clarification of this problem by horticulturists. In Michigan some work on strains of cherry is in progress, but much remains to be done.

As yet little progress has been made in the rooting of commercial prunus species. The importance and desirability of obtaining single clonal lines of prunus species by rooting have been long recognized by the writer in his studies on virus strains and variability in symptom expression in the stone-fruit viruses. Unless or until scions or cuttings can be rooted and grown satisfactorily on their own roots, the rootstock problem will continue to exist and demand attention.

#### Rootstocks.

The crux of the rootstock problem is that it crosses state lines. Some attribute rootstock trouble to the use of native-grown seedlings as a result of World War II disrupting the international channels for importing the better seeds used in the past. Some nurserymen buy seeds and grow their own seedlings locally. Others specialize in growing seedlings the first year on contract for nurserymen elsewhere. The fact that the seed sources are largely limited to seed-producing orchards in two states (Washington and Oregon) for Mahaleb and one (Virginia) for Mazzard cherry would seem to afford ready opportunity for a careful check on the health of the seed-bearing orchard trees at their sources, but thus far those most familiar with the troubles have not been afforded the interstate collaboration or cooperation necessary to study the role of the seed sources.

It is significant that, as a rootstock for Montmorency cherry, the Mahaleb cherry is not so widely adapted as the Mazzard cherry to soil conditions most generally encountered in the principal cherry-growing states. Despite this fact, it is the Mazzard rootstock that is giving the most trouble. Moreover, wherever trouble has been encountered, viruses have been found present in the trees. It is possibly for this reason that the orchard performance of the larger, later-maturing trees on Mazzard roots is frequently poorly productive. From the standpoint of yields, the most productive Montmorency cherry orchard encountered in the writer's observations over a period of thirteen seasons was on Mahaleb roots. This orchard was on good



Montmorency Cherry Leaves.  
Top: Yellows. Middle: Ringspot.  
Bottom: Green-ring Yellows.

cherry soil and attained yields as high as 500 pounds of cherries per tree at thirteen years of age compared to yields concurrently of none to 250 pounds on virus-infected trees.

Nurserymen much prefer the Mahaleb rootstock, not only for this reason, but because it gives much better stands of sour cherry trees than Mazzard. Since the Mazzard rootstock is used almost exclusively for propagating sweet cherries in the

same region of the United States where sour cherries are grown, the rootstock problem is involved in either case.

The abnormalities of cherries can be conveniently considered under the headings of sour cherries and sweet cherries.

#### Sour Cherry Diseases.

The Montmorency and Early Richmond varieties have been found more subject to devitalization and decline from viruses than the English Morello probably because of their more vigorous growth. Although there seemed to be some differences, the abnormalities occurred on trees propagated on both the Mahaleb and Mazzard rootstocks. This invited a careful study of the abnormalities of rootstocks and the varieties propagated thereon all the way from the seedling stage to that present in the mature orchard.

#### Cherry Yellows.

The best known sour cherry virus disease in the northeastern United States is yellows. Its two most conspicuous symptoms are the abrupt seasonal yellowing of the leaves in June and defoliation. Young infected trees relatively quickly develop the advanced weeping type of symptoms characterized by the death and loss of the fruit buds where leaves had fallen prematurely. In older trees it takes several years for this advanced, less productive stage to develop, but given time, it invariably does so. Eventually, only the previous season's terminal growth sets fruit buds and bears fewer but larger fruits and leaves.

In young nursery trees yellow leaf symptoms are usually delayed on the first season's growth following budding. In fact, no symptoms may occur in the first season due to lag in growth and masking from summer temperatures. In the second and last season of growth in the nursery, symptoms usually appear at about the same time as in the orchard and this is the season when horticultural inspectors examine the plantings with great care at several intervals during the season. Since certified budwood has been used by nurserymen for propagating purposes it is significant that the yellows symptoms still occur occasionally on individual trees widely separated from one another. This is circumstantial evidence that the virus was resident in or came through the rootstock.

#### Ringspot.

Ringspot is a widespread, non-lethal and often masked disease which attacks the Montmorency



Montmorency Cherry Leaves.  
Top: Rosette. Middle: Severe Rosette.  
Bottom: Mottle.

cherry whether on Mahaleb or Mazzard roots. Other names for it are shredded leaf and little leaf. Following inoculation into healthy trees, it produces severe shock symptoms consisting of terminal dieback and necrotic ringspot lesions on the leaves, which are followed by recovery from conspicuous symptoms. Although symptoms are masked and rather inconspicuous thereafter, it reduces the vitality of the cherry trees, making them shorter-lived by making them more subject to winter injury. They also become less productive, with the leaves and cherries smaller in size.

Indexed on peach, some of the

strains produce a striking dieback and bark necrosis or canker, which is followed by masking on the new growth. Some of the strains are so mild as to leave the peach symptomless. On this point there is great need for more research work, if only to find a better indexing host, such as is now claimed for the Japanese cherry, *P. serrulata*, by Milbrath and Zeller (*Science*, 101: 114-115, Feb. 2, 1945) in their work on cherry viruses in Oregon. They found that the Kwanzen and Shirofugen varieties were reliable test plants and gave a severe reaction for the mild or latent viruses of cherries. For experimental purposes, single clonal lines of Montmorency cherry would greatly aid in evaluating the virus strains.

Ringspot virus inoculated into Montmorency cherry trees induces much more conspicuous and severe symptoms when on Mazzard than on Mahaleb roots. At present it is not known how much of the variation encountered is due to stock-scion incompatibility effects, to specific differences between the viruses associated with the respective rootstocks, or to strain differences in the viruses themselves. The most significant thing about the ringspot virus is the relatively high percentage of orchard trees carrying it partially to almost completely masked for symptoms.

#### Greenring Yellows.

The name greenring yellows describes a relatively minor virus disease of Montmorency cherry. It may prove to be a milder strain of cherry yellow virosis.

#### Rosette or Mottle.

The rosette or mottle disease is a minor one. The mottle symptoms are most conspicuous just as the leaves open, being associated with growth that is retarded, chlorotic and distorted. As the season advances the leaves partly outgrow the condition, but a trained eye can spot such trees easily because of the short rosette type of terminal growth, together with some leaf distortion. This virus disease is ordinarily found only on Montmorency cherry when on Mazzard roots, which suggests it may be seed-borne or rootstock-borne. When inoculated on Mahaleb-rooted trees the mottle symptom develops, with the leaves less retarded and shortly following bloom. In any case, so few fruits set from a bloom that is delayed about a week that growers commonly remove such trees because of their poor yields.

#### Leaf Mottle and Pink Fruit.

Another minor disease is leaf mottle or pink fruit, which has been encountered only on Montmorency



Mazzard Cherry Leaves.  
Top: Tatterleaf. Middle: Crinkle.  
Bottom: Mottle.

trees propagated on Mazzard rootstocks. In this disease the leaves, although approximately normal in size and shape, have an irregular light and dark green mottle which fluctuates in intensity from year to year. The fruit is light red in color, low



in sugar and soluble solids, insipid in taste and rather firm of flesh. The productivity of the trees is also reduced.

#### Sweet Cherry Diseases.

The two abnormalities most frequently associated with sweet cherry varieties grown in New York state have been designated tatter-leaf and mottle. The varietal reactions will not be discussed here.

#### Tatter-leaf.

The so-called tatter-leaf, or lace-leaf, is essentially a ringspot disease. The symptoms induced on sweet cherry are essentially the same whether the inoculum is taken from ringspot-affected Montmorency sour or tatter-leaf-affected Yellow Spanish sweet cherry trees. The sequence starts out with chlorotic ringspots, with necrosis and shot hole following. The irregular shot holes resulting gave rise to the name tatter-leaf. Trees affected with this disease may or may not be masked in symptoms in whole or in part, depending on the variety, but are more subject to winter injury, which reduces yields and shortens the life span of the trees.

#### Mottle.

The mottle disease is characterized by a chlorotic mottling of the foliage which is not usually accompanied by necrosis and shot hole except when mixed with the tatter-leaf virus. It is readily distinguished from tatter-leaf, just as yellows is readily distinguished from ringspot in Montmorency by indexing on Italian prune, where they induce typical prune dwarf symptoms.

#### Crinkle.

The leaf crinkle symptom is sometimes associated with the Mazzard rootstock. It appears to be a genetic condition, since it is seed-borne and bud-perpetuated, but not bud transmissible. Crinkle has been observed in seedlings grown under controlled conditions in the greenhouse, in nursery plantings and also on sprouts growing up from Mazzard cherry roots of Montmorency cherry trees in orchard plantings. Although rela-

tively obscure and unknown in the northeast, this symptom has been observed in certain commercial sweet cherry varieties in the Pacific northwest. The so-called crinkle occurring there also on the scion variety may eventually prove not to be genetic in character.

#### Where Cherry Viruses Reside.

In an attempt to locate the source of the cherry viruses, a careful examination and study has been made of such potential sources as (1) stone-fruit plants growing in the wild and especially in fence rows close to commercial orchards and nursery plantings, (2) commercial cherry orchards and nursery plantings and (3) nursery plantings including the budwood and rootstocks from the time they enter the nursery district, whether as seeds, seedlings or scions.

#### Plants Growing in the Wild.

The problem of where cherry viruses reside or are harbored until gaining access to orchards and nurseries has been explored over a period of years. Of the two principal rootstocks, the Mazzard cherry was commonly found growing along fence rows and roadways in New York state. Moreover, it is sometimes found diseased in the wild, being most often affected by the tatter-leaf virus. These observations have been certified by indexing studies conducted in the greenhouse.

By indexing studies on peach, Mazzard and Montmorency cherry, what appears to be the sour cherry ringspot virus, which is closely related to the sweet cherry tatter-leaf virus, has been harbored occasionally in the chokecherry, *P. virginiana*, and the pin cherry, *P. pennsylvanica*, but not in the rum cherry, *P. serotina*. In addition, the same two above-mentioned *Prunus* species have occasionally been found harboring the cherry yellows virus. In the few cases that this has happened, however, only plants close to orchards were affected, which suggests that the insect vector carried the virus from the orchard into the wild.

No clear-cut case of admixtures of

these two viruses has been found in the wild, a condition which is prevalent in orchards. Until the natural insect vectors are known and a ready means of separation of these two viruses has been found, confusion will continue to exist.

The natural insect vectors probably carry the viruses in both directions between orchard and fence row and nursery planting and fence row. With the situation existing wherein more diseased plants are found in the wild in the vicinity of orchards than in more remote locations, it would appear that under these circumstances virus movement is from the orchard into the wild rather than vice versa.

Relatively rarely the chokecherry has been affected with a nonlethal red-leaf disease, that is definitely not caused by yellow-red virus of peach. It produces necrotic symptoms when indexed on peach. These symptoms resemble those produced by some strains of the cherry ringspot virus. The fact that masked chokecherries, as above mentioned, also yield a ringspot virus is suggestive that they are either two strains of the same or different viruses, which only further work will clarify. The fact that viruses occur on plants growing in the wild makes it highly advisable for all nursery plantings and new orchards to be isolated from all wild *Prunus* species for distances of one-fourth mile or more.

#### Orchard Virus Situation.

Careful examination of orchards over the past decade leaves little doubt that multiplication and spread of viruses occurs in plantings of all ages. Moreover, propagation from the orchards to the nurseries without first indexing to insure the use of healthy scions or budwood is extremely hazardous. The removal of diseased trees in old orchards and replanting with young trees is inadvisable for several reasons. Since young trees are more susceptible than older ones and also are quicker to show symptoms, the hazard of interplanting would seem to be intensified.

[Continued on page 18.]

Table 1.—Results of observations made in August, 1942, and in June, 1943, on the Mahaleb rootstock planted at Dansville, N. Y., early in 1942.

Where grown in:		1942		Number of		Total seedlings		Live buds		Dead buds		Dead seedlings		Abnormal seedlings <sup>1</sup>		
1941	at	Dansville		samples	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Home-grown	7	nurseries		8	178	100	123	69.0	39	22.0	16	9.0	13	7.3		
Oregon (2)	5	nurseries		9	95	100	63	66.3	17	17.9	15	15.8	10	10.5		
Iowa (2)	5	nurseries		10	240	100	133	55.4	40	16.7	67	27.9	17	7.1		
Washington (2)	3	nurseries		3	30	100	15	50.0	9	30.0	10	33.3	3	10.0		
Ohio (1)	1	nursery		1	10	100	7	70.0	2	20.0	1	10.0	1	10.0		
Totals		21	nurseries	31	553	100	341	62.0	107	19.0	105	19.0	44	7.9		

<sup>1</sup>Abnormal seedlings include those typical of known abnormalities of virus origin as well as atypical ones, some of which have not as yet been identified. The known types of virus origin are discussed in the text.

# Beginning in the Nursery Business

## II. RETAIL SALESYARDS—CASH AND CARRY

By John J. Pinney

The easiest type of nursery business to start is the salesyard, or cash-and-carry nursery. This corresponds roughly to the retail store. Less initial investment is required, less knowledge of the products sold and less time to become established.

Your success or failure may depend largely upon the location you choose for your business. As in any other retail enterprise, one must have customers, lots of them. If they are not at hand, you must be sure that they will come to you from a distance.

### Choice of Community.

If you have not already chosen the community in which you wish to locate, you can gain a great initial advantage by giving careful consideration to several important factors. In general, the large cities are better suited to a cash-and-carry business. The greater the percentage of homeowners, the more potential customers you will have. Avoid cities topheavy with apartments or rented homes. Be sure there is not too much local competition.

Let us cite an example: A highly profitable cash-and-carry business was developed in the space of a few years in a city of less than 75,000. It was a city of homeowners, fairly wealthy, and without a progressive retail nursery to take care of the demand. The man (let's call him Green) who established the business had no previous experience in the nursery business other than some success with growing roses in his own backyard. His neighbors, admiring his rose garden, wanted him to supply them with rose bushes like his; so he began selling on commission for the firm from whom he had bought his roses. Sensing the possibilities in the field, Green selected a site near the edge of a good, rapidly developing residential area with no zoning restrictions against a nursery and with room to expand. On this, he built an attractive combination home, office and salesroom.

Consistent advertising in the newspapers and on the local radio soon brought him a satisfactory volume of cash-and-carry business. The city was growing rapidly, many new homes were being built, and there was no one in the community to landscape them. Green had many calls for

Supplementing general pamphlets issued by governmental agencies and colleges instructing returned war veterans on opportunities and problems in starting their own business enterprises, this series of articles deals particularly with the nursery field and has been prepared by a man with broad lifetime experience in this industry. The various methods of sales operation will be treated in separate articles, to point out the essentials of each form of business.

While directed primarily to the returned veterans seeking to establish themselves in this business, the articles will be available to others of limited experience. Reprints will be made available for distribution to your sons or employees in service, or to others who might benefit. Just send names and addresses if you wish the articles mailed direct as they appear, or write the editor the number of reprints you would like for your own use. There is no charge—this service is contributed by the magazine in the veterans' behalf.

landscape service, which he did not feel qualified to render. However, with the encouragement of his wholesale sources and the assistance of qualified men in these organizations, he was soon supplying plans and doing landscape planting.

With experience came confidence. In the course of a few years Green was drawing and executing his own plans and had developed a profitable landscape service along with his cash-and-carry business. The point we wish to emphasize is that Green had chosen the right community in which to establish his business. It was comparatively easy going for him because he had a large potential market within the city and no serious competition to worry about.

It may seem to you that such communities are rare indeed, but any wholesale nurseryman can give you the names of many towns and cities that are excellent potential markets for nursery stock, but in which there are either no nurseries at all or no wide-awake nurseryman who would offer serious competition.

The population of a city is not always a good criterion for judging the size of the market. Some industrial cities, especially those given over

to heavy manufacturing, are notoriously poor markets for nursery stock. Cities in which there are small yards or no yards at all, or in which there is a high percentage of apartments or rented homes, are poor places to sell nursery stock. Choose a community where folks live in their own homes and take pride in them.

Oftentimes a comparatively small city has a large trade territory. It may draw retail trade from many miles around. This is especially true in the middle west and west, where many towns of only a few thousand population will support a retail trade as great as that of other cities several times as large.

### Location of Nursery.

Cash-and-carry nurseries should be readily accessible. Locations on the busy highways are not always best. Rapidly moving traffic resists all stops. Most of the business of a cash-and-carry nursery comes from the local people, not transients.

The exact location of your nursery with reference to the city is not an easy matter to decide. Large mercantile organizations searching for good locations for branch stores study every angle carefully. They analyze traffic movement and density, parking facilities, and space needed.

The trend of retail trade is away from the congested downtown areas to suburban districts nearer to the homes and where more parking space is available. Some of the large department stores are finding it to their advantage to establish branch stores in the outlying districts of the city. One successful chain of groceries in the middle west has established most of its new stores in suburban areas with company-owned or controlled parking space adjoining.

Perhaps the best location for a cash-and-carry nursery is on a highway not too far from the residential part of the city. It can be outside the city proper, or on a passenger traffic way in the city between the residential and business districts, or it may be in the residential district itself if there are no zoning restrictions. Try to choose a location where the most people who are potential customers will see your place when traveling along their accustomed routes. The farther a customer has to go out of his way to reach you,

the less likely you are to sell him. Conversely, the more accessible your establishment, the greater the volume of business you can expect.

If you decide to locate on a highway, try to select a site on the outside of a curve. Your place will be spotted more readily and the motorist, because he is traveling slowly, will be more likely to stop.

In deciding how much ground you will need, be sure you have plenty of space for (1) off-the-street parking, (2) display ground, (3) the buildings that you need and (4) expansion.

You will need off-the-street parking space, plenty of it. Your customers should be able to drive off the street or highway onto your grounds and park without danger of being hemmed in by someone parking in back of them. This will take a considerable amount of ground, especially if you do the volume of business that you hope for.

#### Amount of Land Needed.

There is no rule to follow for the amount of land needed to establish a cash-and-carry business. Successful salesyards have been conducted on a few city lots, while others occupy several acres. One acre should be ample for a good all-around development.

A long shallow strip adjoining the highway is better than a deep strip with only a short frontage. You can make a more satisfactory layout with the long frontage.

#### Planning the Layout.

Before you begin construction, make a complete plan on paper so you can study it carefully and try to dig out all the "bugs." Unless you have had previous experience with sales lots and know just about what you want, you would do well to visit as many of them as you can to get ideas. In this way you can avoid falling into costly errors; on the other hand, you will get suggestions that will help you in starting right.

Another thing you can do to help you build your fund of ideas is to talk to successful merchants in other kinds of retail business. After all, the principles of selling are much alike for all lines of merchandise. These men might be able to help you materially in planning your own displays.

#### Parking Cars.

How many times have you failed to buy an article because you could not find a place to park near the store? Keeping this in mind, you should make parking simple and inviting. Locate the parking area so that it can easily be seen from the highway, and arrange it in such a

way that the parking plan is obvious.

Cars parked helterskelter reduce the space available for parking and increase the danger of accidents. Your customer will not feel kindly toward you if some other customer dents his fender. Be sure that parked cars do not interfere in any way with the visibility and accessibility of your displays, or the loading of purchases into other cars.

#### Buildings.

You will need some kind of a building. This can serve many purposes, and your needs for under-cover space will increase as your business grows. The primary purpose of the building is to provide office space, but you may also need it for storage, as well as for displays of tools, insecticides, fertilizers, seeds, etc.

It is not necessary to spend a lot of money building an elaborate

planting. It is your best advertisement.

[Next installment: Selecting assortment, setting up displays, selling.]

#### WILLIAM M. LONG.

Reelected second vice-president of the Pennsylvania Nurserymen's Association for the current term, William M. Long is secretary and treasurer of the Southampton Nurseries, Southampton, Bucks county, Pa. The firm's operations include forty-five acres devoted to ornamental trees, shrubs and azaleas; ten acres of apple trees, several acres of farm crops and a tomato cannery. Mr. Long is interested in growing the more unusual types of hardy shrubs, particularly the berry-bearing kinds.

Mr. Long graduated from Lehigh University in 1921, where he was a member of the Delta Tau Delta fraternity. He is also a member of the Jenkintown Rotary Club.

#### A. A. N. NEWS.

When the public relations committee of the American Association of Nurserymen completed its discussions at Chicago, August 27 and 28, a practical program of promotional work was prepared for submission to the executive committee, with a request that a meeting of the full board of governors be called for January, in order that the proposals might be reviewed by the membership at large. These proposals are expected to be made available to the membership before long, so that chapters may meet to discuss them before the board of governors gathers in January. The time of that gathering will probably be January 16, 1946, the middle day of the convention of the Illinois State Nurserymen's Association, at Chicago.

Since convention restrictions have been lifted by the Office of Defense Transportation, the A. A. N. executive committee is seeking the suggestions of members as to the location of the 1946 victory convention. According to the bylaws, the association should hold conventions in the southeast and southwest regions at an early date, preferably in 1946 and 1947, but is not explicitly bound to do so. Early expressions of opinion are desired, as the place of meeting must be settled by the time of the January meeting.

The landscape bulletin circulated to A. A. N. members, hitherto prepared by members or in the Washington office, will henceforth be written by Dr. L. C. Chadwick, of Ohio State University.



William M Long.

structure, especially when you are just getting started and are anxious to keep your expenditures down to the minimum. But by all means make the building as attractive as possible, no matter how small. We have seen otherwise attractive salesyards spoiled by the presence of ugly unpainted shacks serving as offices. Even a small building can be attractively designed. If you are clever at planning, you may be able to put up a small building that can be enlarged later without spoiling the architecture.

Do not fail to landscape your office building just as soon as you can. A little well kept lawn helps a lot. How often nurserymen fail to practice what they preach! You can make a mighty favorable impression on your customers by surrounding your office with a beautiful and dignified



# Here it is... GRAHAM-PAIGE'S New Scientific Farm Implement

## ROTOTILLER

Trade Mark Reg. U. S. Pat. Off.

Model B1-4

### FOR GREENHOUSE, NURSERY AND TRUCK GARDEN!

5 H. P. MOTOR!

Rugged, efficient motor.  
Uses only about 1/2 gallon  
of gasoline per hour!

NEW POWER-DRIVE!

Amazingly simple new drive  
transmits power to rotating  
tines with minimum of loss.

INSTANT CONTROL!

Simple easy-working con-  
trols right at your fingertips  
— to start or stop instantly.

ROTATING TINES!

Dig forward as they go,  
shredding and mixing soil,  
fertilizer and stubble.

QUICK STARTING!

Improved device assures  
quick starting under all  
operating conditions.

The Rototiller is a revolutionary new power-tool for scientific tillage of the soil. It has already won enthusiastic endorsement from thousands of users all over America. The powerful slashing action of Rototiller's whirling steel tines prepares a deep, loose, thoroughly crumbled seedbed or moisture-retaining mulch without the use of plow, disc or harrow. Yet it operates with amazing economy, because the rapidly rotating tines help to propel the machine forward, instead of lending additional drag as is the case with conventional implements.

Only the handy "walking models" are being manufactured at the present time. But Rototillers have already been developed in special tractor-drawn types, for large-scale farming, that will

soon go into full quantity production.

The new Model B1-4, illustrated above, makes an excellent extra power-tool for the average farm, or a primary implement for the fruit, vegetable or berry farm, vineyard, grove, orchard, nursery, estate, or garden. It will operate well in confined areas where tractors or teams would be out of the question, often doing work formerly requiring large crews with hand tools.

The Rototiller mixes organic materials and fertilizers thoroughly into the soil where they can feed the roots of the crop. "Once over" is usually enough to prepare ground for immediate planting. It is even used for mixing soil and cement in a remarkable new time-and-labor-saving method of preparing concrete

walks, drives and airstrips for both military and civilian use.

Fill out the coupon below and mail it in for information about the Rototillers already available and others soon to come. Graham-Paige Motors Corporation, Farm Equipment Division, Detroit 32, Michigan.

Yes, there's a new kind of car a-coming! And Graham-Paige's Board Chairman, Joseph W. Frazer, known for his strong and far-sighted leadership, is getting ready to build a great new car under his own name—the Frazer!



KEEP WATCHING THE NEWS FROM GRAHAM-PAIGE



## ROTOTILLER-----

Trade Mark Reg. U. S. Pat. Off.

21

Graham-Paige Motors Corporation  
Farm Equipment Division  
Detroit 32, Michigan

Please send me complete information about ROTOTILLER, for scientific tillage of the soil without plow, disk or harrow.

☐ Please send facts about dealer franchise. (A few choice territories available for qualified dealers.)

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# Fertilizers' Action in the Soil

## PART II

By L. C. Chadwick

The principal carriers of phosphoric acid are (1) ground rock phosphate, (2) bone meal, (3) basic slag, (4) superphosphate and (5) ammoniated phosphate products.

Even though ground phosphate rock contains thirty to forty per cent phosphoric acid, it is mostly held in the form of tricalcium phosphate and consequently is very slowly available. It would appear to have little use in the fertilization of ornamental plants.

Most of the bone meal offered for sale as fertilizer is designated as steamed bone meal. It contains about two per cent nitrogen and twenty-two to twenty-five per cent phosphoric acid. The phosphate in bone is mostly in the form of tricalcium phosphate and is very slowly available, although somewhat more so than that of ground rock phosphate. It is more quickly available in well aerated soils than in heavy silts and clays and tends slightly to increase the alkalinity of the soil.

Basic slag is a by-product of the steel mills and ranks second to superphosphate as a source of phosphorus. High-grade basic slags contain from eight to twelve per cent phosphoric acid. Its exact chemical properties are questionable, but the phosphate in finely ground basic slag is more readily available than that in ground phosphate rock or bone meal. Because of its high lime content, it causes an alkaline reaction. Where the addition of lime is not detrimental, basic slag can be considered to be about eighty-five per cent as efficient as superphosphate.

While other processes are used, most of the superphosphates are produced by treating rock phosphate with sulphuric acid, thereby changing the insoluble tricalcium phosphate to soluble dicalcium and monocalcium phosphates. The ordinary superphosphate carries about twenty per cent phosphoric acid. Concentrated superphosphates, sold as double and treble phosphates, are produced by treating the phosphate rock with phosphoric acid. The resulting product is composed mostly of monocalcium phosphate and contains as high as fifty per cent phosphorus pentoxide.

When superphosphate is applied to the soil some of the monocalcium and dicalcium phosphate contained therein may revert to tricalcium phosphate. This reverted form of tri-

calcium phosphate, however, is more available to plants than the natural tricalcium phosphate of phosphorus rock. This reversion and the extent of its unavailability to plants depend upon such factors as (1) chemical composition of the soil, (2) the texture of the soil and its organic matter content, (3) the reaction of the soil, (4) the carrier of the phosphorus and (5) the method of application.

Experimental work indicates that the availability of phosphorus from the most common phosphorus compounds in the soil is in the following order, from the most to the least: Calcium and magnesium compounds, organic compounds, iron and aluminum compounds and chloride and fluoride compounds. Availability of phosphorus from this standpoint suggests that the soil contains ample amounts of calcium and magnesium. The optimum soil reaction for phosphorus availability is pH 5.8 to 6.8. In highly acid soils the phosphorus is often tied up by the available iron or aluminum in unavailable compounds. In highly alkaline soils the phosphorus may be tied up by excess calcium in the form of tricalcium phosphate, which is released only by the action of acids. Application of superphosphate to the soil does not make it more acid, as sometimes reported. There is essentially

no change in soil reaction following application of superphosphate.

Sandy soils have less fixing powers than clay soils. The clay soil particle absorbs the phosphorus molecule and holds it so tightly that the plant roots have difficulty in taking it off the particle. The organic matter particles in the soil also have the power to absorb phosphorus, but these organic particles soon decompose and the phosphorus is released and is taken up by the plant roots. This fact emphasizes the importance of organic matter in the soil.

Only the monocalcium phosphate is water soluble. Dicalcium phosphate is citrate soluble and there is less tendency for this form to revert to an unavailable form. However, in commercial practice it is not easy to add phosphorus in this form. Superphosphate in pellet or granular form is not fixed in the soil as rapidly as it is in the powdered form.

Organic phosphate such as calcium glyco phosphate appears to be less fixed by the soil.

When superphosphate is applied as surface dressings it penetrates very slowly, becoming fixed in the upper few inches of the soil, mostly in the upper two to four inches with a penetration limited to six to nine inches. Plants as a whole probably recover not more than twenty per cent of the amount applied, and that

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Syringa rethomagensis (chinensis), generally known as Persian Lilac		Per 100	Per 1000
2 to 3 feet.....		\$27.00	\$240.00
3 to 4 feet.....		38.00	330.00
Viburnum americanum (trilobum), American Cranberry Bush			
2 to 3 feet.....		25.00	225.00
3 to 4 feet.....		30.00	270.00
4 to 5 feet.....		40.00	.....
Viburnum dentatum, Arrowwood Viburnum			
2 to 3 feet.....		20.00	180.00
3 to 4 feet.....		25.00	200.00
Viburnum lantana, Wayfaring Tree Viburnum			
2 to 3 feet.....		24.00	.....
3 to 4 feet.....		27.00	240.00
4 to 5 feet.....		35.00	.....
Viburnum lentago, Nannyberry Viburnum			
2 to 3 feet.....		20.00	.....
3 to 4 feet.....		28.00	240.00
4 to 5 feet.....		35.00	300.00
5 to 6 feet.....		45.00	375.00
Viburnum opulus, European Cranberry Bush			
18 to 24 inches.....		18.00	.....
2 to 3 feet.....		22.50	.....
3 to 4 feet.....		27.00	240.00
4 to 5 feet.....		35.00	.....

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### PHLOX DECUSSATA (Hardy Phlox). Popular Varieties

	Per 10	Per 100
AMERICA. Rosy pink; strong grower. 36-in. ....	\$1.50	\$12.00
B. COMTE. Brilliant purple. 24-in. ....	1.50	12.00
BARON VON DEDEM. Brilliant orange-red. 24-in. ....	1.75	15.00
BEACON. Clear, cherry red. 36-in. ....	1.50	12.00
BRIDESMAID. White with crimson eye. 40-in. ....	1.50	12.00
CHAMPS ELYSEE. Dark purple. 24-in. ....	1.50	12.00
ECLAIREUR. Rosy magenta. 32-in. ....	1.50	12.00
EUROPE. Pure white with carmine center. 40-in. ....	1.50	12.00
FIREBRAND. Clear, orange scarlet; very large. 36-in. ....	1.75	15.00
FRAU ANTON BUCHNER. Pure white. 32-in. ....	1.50	12.00
INDEPENDENCE. Pure white. 30-in. ....	1.50	12.00
JEANNE D'ARC. Pure white. 40-in. ....	1.50	12.00
LA VAGUE. Mauve rose, with cherry red center. 42-in. ....	1.50	12.00
LOUISE ABBEMA. Pure white. 20-in. ....	1.50	12.00
MRS. CHAS. DORR. Tall lavender. 42-in. ....	1.50	12.00
MRS. JENKINS. Pure white. 30-in. ....	1.50	12.00
MRS. R. P. STRUTHERS. Orange red; the best. 36-in. ....	1.50	12.00
PANTHEON. Carmine pink. 30-in. ....	1.50	12.00
PRIME MINISTER. White, crimson eye. 36-in. ....	1.50	12.00
RHEINLANDER. Salmon pink. 32-in. ....	1.50	12.00
RIVERTON JEWEL. Mauve rose with carmine eye. 30-in. ....	1.50	12.00
RYNSTROM. Deep pink. 48-in. ....	1.50	12.00
SIEBOLD. Orange scarlet with crimson eye. 30-in. ....	1.75	15.00
SIR EDW. LANDSEER. Fine bright crimson. 32-in. ....	1.50	12.00
SPECIAL FRENCH. Fine bluish pink with salmon eye. 42-in. ....	1.75	15.00
VON HOCHBERG. Black-red color. 42-in. ....	1.75	15.00
VON LASSBURG. Pure white; large. 28-in. ....	1.50	12.00
WHITE QUEEN. Pure white. 36-in. ....	1.50	12.00
WIDAR. Deep violet with white markings. 28-in. ....	1.75	15.00

### PHLOX (Various types)

	Per 10	Per 100
AMOENA. Bright pink. 6-in. May. ....	\$1.75	\$15.00
DIVARICATA LAPHAM. Lilac. 12-in. May. ....	1.75	15.00
SUBULATA ALBA (Creeping Moss). White. 4-in. May. ....	1.50	12.00
SUBULATA APPLE BLOSSOM. Fine Apple Blossom. 4-in. May. ....	1.75	15.00
SUBULATA ATROPURPUREA. Deep carmine-red. 4-in. May. ....	1.75	15.00
SUBULATA C. F. WILSON. Soft lavender. 4-in. May. ....	1.75	15.00
SUBULATA LILACINA. Blue variety. 4-in. May. ....	1.75	15.00
SUBULATA MOERHEIMI. Carmine pink. Fine variety. 4-in. May. ....	1.75	15.00
SUBULATA ROSEA. Pink variety. 4-in. May. ....	1.50	12.00
SUBULATA VIVID. Bright pink with darker eye. 4-in. May. ....	1.75	15.00

### PHLOX DECUSSATA. Novelties; new and better varieties.

	Per 10	Per 100
AFRICA. A dazzling, deep scarlet; splendid. 30-in. ....	\$1.75	\$15.00

### PHLOX DECUSSATA—Cont.

	Per 10	Per 100
BARON VON HECKEREN. Deep salmon, glowing red eye. ....	\$1.75	\$15.00
BORDER QUEEN. Improved Jules Sandeau. Enormous compact trusses of pure pink. 20-in. ....	1.75	15.00
BRILLIANT. Large trusses of fiery scarlet. 30-in. ....	1.75	15.00
CAROLINE VANDENBERG. A true lavender blue. ....	1.75	15.00
DAILY SKETCH. Salmon pink, vivid crimson eye. 3-ft. ....	1.75	15.00
E. I. FARRINGTON. Bright salmon and soft pink. ....	1.75	15.00
ENCHANTRESS. Bright salmon pink, dark eye. ....	1.75	15.00
ETNA. Superb deep scarlet. 36-in. ....	1.75	15.00
FIANCEE. One of the best; pure white. ....	1.75	15.00
GENERAL PETAIN. Deep wine red, well shaped. ....	1.75	15.00
GEORGE STIPP. A perfect deep glowing salmon with shaded lighter eye. ....	1.75	15.00
GRAF ZEPPELIN. White with vermillion-red eye. ....	1.75	15.00
GRANDEUR. White with deep rose. ....	1.75	15.00
H. B. MAY. Very large spikes of bright pink. ....	1.75	15.00
JULES SANDEAU. Compact trusses of pure pink. 20-in. ....	1.75	15.00
LEO SCHLAGETER. A clear brilliant scarlet. 3-ft. ....	1.75	15.00
LILLIAN. Beautiful salmon pink, better than Elizabeth Campbell. Early and continuous bloomer. 24-in. ....	1.75	15.00
MORGENROOD. A beautiful new wine red; very unusual and very striking. 30-in. ....	1.75	15.00
MRS. E. FRITCHARD. The best blue Phlox. 36-in. ....	1.75	15.00
MRS. SCHOLTEN. Dark salmon pink, excellent. ....	1.75	15.00
NANA COERULEA. Mauve with starred center. Fine. 16-in. ....	1.75	15.00
NEWBIRD. Amaranth red of great brilliance. ....	1.75	15.00
NORDLICHT. Large, carmine pink with red eye. 36-in. ....	1.75	15.00
PAINTED LADY. Silvery pink salmon with red eye. 36-in. ....	1.75	15.00
PALADIN. Finest salmon pink, red eye. Large. ....	1.75	15.00
PARACHUTE. Clear mauve. Excellent. 30-in. ....	1.75	15.00
P. D. WILLIAMS. Enormous Apple Blossom with darker stripes. 30-in. ....	1.75	15.00
PURPLE SWEETHEART. (New) Reddish purple with deeper eye. ....	2.50	20.00
ROYAL PURPLE. The best deep blue. ....	1.75	15.00
SALMON GLOW. Flame pink with salmon. ....	1.75	15.00
SILVERTONE. (New) Beautiful lilac. ....	2.50	20.00
STARLIGHT. Violet red shading to lilac. ....	1.75	15.00
WM. KESSELRING. Large violet with white eye. ....	1.75	15.00
WORLD PEACE (New). There can be no better name for this beautiful Phlox. Its growth is as strong as we want Peace to be and its color as innocent and pure as we want our hearts to grow. A very strong grower, this Phlox has foliage like that of Miss Lingard, dark green glossy leaves, full of health and vigor, with enormous pure white flowers on strong sturdy stems, such as are unusual for a Phlox. ....	4.00	35.00

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recovered from surface applications by deep-rooted trees is much less than this percentage. This fact emphasizes the statement that shrub and tree response to phosphorus is not always due to the low phosphorus requirement of such plants, as often expressed, but to the fact that the phosphorus does not remain in an available form or it has not been placed where the roots of such plants can absorb it. Phosphorus thoroughly mixed with the soil is more quickly and highly fixed than it is when applied in localized applications. Considering these facts, it would seem advisable to apply phosphorus to trees in drill holes at a time when the roots are active so that absorption may take place before the phosphorus becomes fixed on the soil particles or reverts to a slowly available or unavailable form. It goes without saying that the holes should be drilled in the area occupied by the feeding roots.

The recommendation is often made to mix superphosphate with the soil used in the backfill about balled plants or about the roots of bare-root plants when they are transplanted. It would seem to be a better practice to apply superphosphate in a band close to the ball and at a level slightly below the greatest concentration of roots. For bare-root plants apply it in a band or layer just beyond and below the roots. When superphosphate is applied to plants in the nursery, make the application in bands just beyond and below the root tips.

Since eighty-five to ninety per cent of the available phosphoric acid in Ammo-Phos is soluble in water, it has considerable greater mobility in the soil than the less soluble superphosphate usually employed as a source of phosphorus. This fact has been pointed out in connection with shade tree fertilization at Ohio State University and in tests elsewhere.

#### Carriers of Potash.

Most of the commercial potash now available is in the form of potassium chloride (muriate of potash) and potassium sulphate. In the early years of the fertilizer industry, in fact up to the start of World War II, much of the potash used in this country came from German sources. During World War I considerable quantities were produced in this country, but it was not until shortly before World War II that the American potash industry really came into its own. While wood ashes, tobacco stem, wool waste, flue dust, seaweed and by-products of the sugar and alcohol industries are all sources of potash salts, all these combined now

constitute only a small part of the total supply.

Chief sources of potassium chloride in this country are brine deposits from Searles lake in California, the Great Salt Lake desert and from natural deposits of soluble potash salts in the southwestern states. Potassium sulphate is obtained in this country from such sources as the green sands of the eastern states and from crude feldspars from such states as Utah and Wyoming.

Muriate of potash constitutes a large percentage of the potash salts offered to the trade. It is made by a refining process whereby sodium chloride is removed from the potash salts. Muriate of potash contains forty-eight to sixty-two per cent potash, averaging about fifty per cent. Potassium sulphate is made by dissolving any double sulphate of potassium and magnesium in water and adding concentrated potassium chloride. Commercial potassium sulphate contains about forty-eight per cent potash. While experimental evidence indicates some crops respond to one carrier more readily than the other, in general it can be considered that there is little choice between them, except that muriate of potash is cheaper.

Potassium is most often deficient in muck, peat and sandy soils. Clay soils containing a high organic content usually respond less to potash applications. Potassium is readily available in highly acid soils, but its availability decreases rapidly as the neutral and alkaline reactions

are approached. Any change in soil reaction caused by adding either muriate of potash or potassium sulphate can be considered as insignificant. When potash fertilizers are added to the soil, they dissolve and undergo ionization and the potassium is held by water condensed around the soil particle or fixed by the colloidal soil particles. The positive charged ions of the water hold the potassium molecule loosely and absorption by the roots takes place without great difficulty. Some fixation of potash may occur and this appears to be mostly in the upper soil layers that are subject to alternate wetting and drying. With this thought in mind, it would be best to place potash fertilizers below the surface layers. With ornamental plants, where surface applications are practiced, application of a mulch would be beneficial.

The mobility of potassium in the soil may be considered to be intermediate between that of nitrogen and phosphorus. It is generally highly active and heavy applications may result in root injury.

#### Essential Trace Elements.

The more essential of the trace elements for ornamental plants are (1) calcium, (2) magnesium, (3) sulphur and (4) iron. Less essential appear to be manganese, boron, copper and zinc.

Calcium should be considered as an element essential to plant growth as well as a corrective of soil acidity and as a modifier of soil structure.

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It is usually present in ample quantities except in highly acid soils. Calcium is usually applied in the form of pulverized limestone, either as calcium carbonate or as calcium magnesium carbonate (dolomite) and hydrated lime. Calcium silicate or gypsum may be used when a change in pH is not desired. The availability of calcium increases rapidly between pH 6.0 and 7.0 and is highly available in the alkaline range. Calcium is generally quite immobile in the soil.

Magnesium is most often applied as a fertilizer in the form of magnesium sulphate or as dolomitic limestone. The magnesium in limestone is slowly available in the soil. Applications to magnesium-free lime is thought to accentuate magnesium deficiency. Deficiencies of magnesium are most common in soils containing high levels of potassium and calcium. The availability curve of magnesium in respect to soil reaction is similar to that of calcium.

While sulphur is essential for plant growth, it seldom has to be added as a fertilizer for ornamental plants. Sulphur is very efficient in increasing acidity. It requires three to seven times more of aluminum sulphate to lower the pH the same degree as it does sulphur, but the action of aluminum is more rapid. Sulphofication is brought about by certain soil microorganisms, and their activity is stimulated by ample nitrogen.

Some ornamental plants, such as pin oak, often exhibit a lime-induced chlorosis when grown on alkaline soils. This chlorosis is due to the lack of available iron and can be corrected by adding iron and increasing the acidity so that the iron will remain in an available form. Ferrous forms of iron are highly available at pH 5.0 and remain in solution and available up to pH 6.5-6.8. Ferric forms of iron are highly available below pH 4.0, but are unavailable above pH 5.0-5.2. Iron chlorosis can be corrected by soil applications of a mixture of sulphur, aluminum sulphate and ferrous sulphate. Best results occur where high nitrogen conditions exist. Good drainage and proper aeration will aid recovery and will help to prevent chlorosis under some conditions.

#### Conclusions.

In the foregoing discussion the more important factors governing the efficiency of fertilizer applications have been mentioned. Chief among these factors are the chemical composition of the soil, its physical structure, its previous treatment, the soil reaction, the ionization of the nutrient denoting how tenacious-

ly it is held by the soil particle and the carrier used to supply the essential element or elements. It should be added that different plants respond differently to fertilizer applications.

Sandy, muck and peat soils are often deficient in potash, and clays in phosphorus and calcium. Nitrogen is often the first limiting element, and iron deficiency is not uncommon in soils of a limestone origin.

Plants cannot be expected to respond to fertilizer applications if they are growing in soils of poor physical condition. The importance of good aggregation of the soil particles, denoting proper air-moisture relations cannot be overemphasized. Good drainage, proper aeration and ample organic matter are prerequisites to fertilizer applications.

The four most common forms of nitrogen are nitrates, ammoniacal compounds, the water-insoluble organic carriers, such as the seed meals, and the soluble organic nonprotein forms, such as urea and cyanamide. The nitrate forms are held loosely by the soil particles, are readily available and are subject to leaching from the soil. They tend to reduce soil acidity. The ammoniacal forms such as ammonium sulphate are held by the soil particle more tightly and are not easily leached from the soil. They are readily available to plants and increase soil acidity. The protein organic nitrogen fertilizers are slow and low in total availability and expensive on the basis of the cost of the amount of available nitrogen contained. They have little influence on soil acidity. The nonprotein organic nitrogen compounds are readily available, are resistant to leaching and show only a slight tendency to increase acidity. The choice of these nitrogen fertilizers will depend

upon the plant, the soil condition and the time of year the fertilizer is applied. For most woody ornamentals the ammoniacal compounds may be considered to be the most efficient in view of the usual application methods. The combination of the various forms in complete fertilizers is suggested. High-analysis forms can be considered in the postwar period. It is well to state in this connection that root injury is not necessarily correlated with the amount of the nutrient in the carrier. High-analysis fertilizers are safe if applied in correct amounts.

Phosphorus is largely nonmobile in the soil, being tightly held by the soil particles. High acid or alkalinity retards its availability. It is highly resistant to leaching and exerts little change on soil reaction. High organic matter content is an aid to its availability, and it is best applied by localized applications. Phosphorus in Ammo-Phos appears to penetrate the soil more readily and is more available to plants than that in superphosphate.

Potash is available in acid soils, but less so in those of a neutral or alkaline reaction. The mobility of potassium in the soil is intermediate between phosphorus and nitrate nitrogen. Application below the surface layers is recommended. Potash fertilizers cause little change in soil reaction.

The essential trace elements may need to be applied under some conditions, but they are usually present in sufficient quantities to insure good growth of ornamental plants. Sulphur and calcium may be required to change soil reactions and iron and magnesium to overcome deficiencies of these elements.

Applications of complete fertilizers should be made with full considera-

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tion of the factors underlying the reaction of its components. Only in this way can greatest efficiency be expected.

### NEW CARLISLE EDITION.

In the July edition of the Co-Operator Magazine, which was sponsored by the Co-Operative Club, New Carlisle, O., were illustrations showing the Scarff farms and 5,000 apple trees being sprayed in W. N. Scarff's Sons' orchards. The Scarff farms were among the first in the country to begin large-scale production of hybrid seed corn and now produce about 25,000 bushels annually. A huge drying plant and storage facilities are required for this enterprise.

Howard N. Scarff contributed an article about a proposed community park to be developed by the club; he is chairman of the sponsorship committee, which asks the raising of \$10,000 for the project.

Max M. Scarff is second vice-president of the club and has been prominent in local war bond drives.

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## VIRUSES AND THE CHERRY ROOTSTOCK PROBLEM.

[Continued from page 8.]

Careful records were kept on the effect of interplanting in several diseased orchards. In one orchard of about 960 trees more than 100 replantings were made over a period of five years. Within four years from the time of these plantings about one-third of the replants became infected, with both ringspot and yellows viruses being involved in approximately equal quantities, which corresponds to the distribution of the diseases in the old orchard trees.

In starting young cherry orchards with the best trees available the opportunity exists to combat the viruses by prompt removal of the affected trees soon after planting, but in this practice little headway has been made. What can and does happen can be gleaned from records of several young orchards kept from four to six years from planting.

One clear-cut case will be cited on the incidence of disease in a young orchard of 396 Montmorency trees propagated on Mazzard roots. This orchard was planted in 1939, with buds coming from trees having the weeping type of growth. One tree showed positive but somewhat masked symptoms of ringspot in 1940, indicating that it came diseased from the nursery. Another tree showed the much more conspicuous yellows symptoms, also suggestive of coming diseased from the nursery. The latter tree was removed in 1941, but the former was allowed to remain. In 1942 a second tree in another part of the orchard was showing yellows symptoms. The number of yellows infections increased to three in 1943. The number of ringspot infections increased to eight in 1943 and to 105 in 1944. The new ringspot infections were conspicuous, the shock symptoms being severe. The following year the necrotic symptoms were much milder, but stunting of growth and reduction of leaf size, called small-leaf, were characteristic. These ringspot infections definitely decreased the vitality

and productivity of the trees. It is considered reasonably certain that all the ringspot infections presumably arose from the single infected tree, which is supported by the fact that the incidence of new infections was greatest in close proximity to the trees previously diseased. None of the prunus species growing in the fence row at one end of the orchard showed any evidence of harboring the disease.

From this case it seems clear that ringspot spreads quickly and yellows slowly. In comparison with other young orchards on Mahaleb roots, the initial shock symptoms were always much more severe in the trees on Mazzard roots. Another significant thing was that sucker growth from the rootstocks was much more in evidence in Mazzard than in Mahaleb. Moreover, the first evidence of ringspot or tatter-leaf symptoms appeared on the sucker growth, which fact poses the possibility that the vector may prefer to work on the rootstock sucker growth rather than that of the scion variety, the Montmorency. Significant also is the fact that the yellows disease spreads relatively much more slowly than ringspot and comes in spurts, which is characteristic of the prune dwarf virus disease.

These observations on the yellows disease are in keeping with the observations on the mottle disease of sweet cherry, and both are in accordance with the well known story of the prune dwarf virus disease, of which these are now considered to be strains.

### Nursery Virus Situation.

To clarify the nursery propagation problem, an experimental planting was started in the main nursery district at Dansville, N. Y., and conducted as a cooperative enterprise between nurserymen, horticultural inspectors and the writer. Samples of all propagating materials brought into this area over a period of three years were planted in this experimental garden and kept under observation. Because many samples were employed, of necessity they were

relatively small, ranging from ten to 100 plants each.

Work pertaining to the cherry centered around the Mahaleb and Mazzard rootstocks and the troubles associated with them before and after budding to sour and sweet cherries.

### Mahaleb Rootstock.

Mahaleb seeds obtained from two seed sources were grown under controlled conditions in the greenhouse and found practically free from virus. The same seeds when grown in the nursery on a larger scale occasionally showed abnormalities. Symptoms of two general types were encountered, (1) chlorotic line pattern or ringspot and (2) chlorosis, stunting, stipple and necrotic spot. Based on indexing studies in the greenhouse, these symptoms simulate respectively what was usually obtained with the ringspot and yellows viruses.

Whether grown in the greenhouse or nursery, the Mahaleb gave relatively high percentages (seventy-five per cent or over) of germination and growth. Also, when Montmorency buds were placed on Mahaleb seedlings over seventy-five per cent grew and gave good stands of trees.

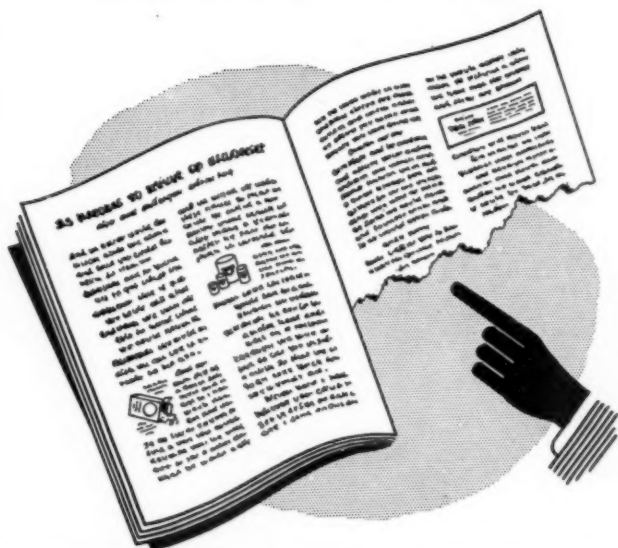
In checking the cases where the buds failed to survive, not infrequently the misses revealed striking chlorotic line patterns on the foliage of the surviving Mahaleb seedlings. When diseased rootstocks occur singly, seed transmission is indicated. In one nursery about one mile from the experimental planting six adjacent seedlings in one row showed the same symptoms. This occurrence indicated that the virus was probably introduced into the rootstock through the use of buds from a diseased scion. Since virus-infected tissue of the Montmorency is weak, it is hard to establish on the Mahaleb rootstock, but sufficient temporary union for virus transmission is frequently made. From numerous experiments it can be concluded that because it is difficult to establish diseased Montmorency buds on healthy Mahaleb and also difficult to establish healthy Montmorency buds on diseased Ma-

Table 2.—Results of observations made in August, 1942, and in June, 1943, on the Mazzard rootstock planted at Dansville, N. Y., early in 1942.

Where grown in:		Number of samples	Total seedlings		What happened to Montmorency buds and seedlings <sup>1</sup>							
1941	1942		No.	Per cent	Live buds	Dead buds	Dead seedlings	Abnormal seedlings				
	at Dansville	4	287	100	158	55.0	45	16.0	84	29.0	7	2.4
Home-grown (2)	2 nurseries	9	88	100	43	49.0	16	18.0	29	33.0	8	9.9
Oregon, Iowa and Washington (3)	6 nurseries	—	—	—	—	—	—	—	—	—	—	—
Totals	8 nurseries	13	375	100	201	54.0	61	17.0	113	29.0	15	3.9

<sup>1</sup>Abnormal seedlings include those typical of known abnormalities of virus origin as well as atypical ones, some of which have not as yet been identified. The most prevalent abnormality (constituting over 50 per cent of the total) was tatter-leaf. Next in order of prevalence was crinkle.

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haleb, these conditions do not favor the build-up of virus in the nursery.

Table 1 summarizes the results of observations made on the Mahaleb rootstock samples planted during 1942. The samples are grouped according to the sources of the rootstocks by states. Abnormal seedlings were present in every one of the thirty-one samples from the twenty-one nurseries represented. This study indicates that abnormalities developed irrespective of where the seeds had been grown the first season, whether at home or in the states represented. Indexing experiments aimed at the identification of the abnormalities were not satisfactory because too little is known about them at present and suitable indexing hosts were not available. It is not concluded that all the chlorotic symptoms are virus induced. Yet, until suitable indexing hosts are available, the element of confusion will continue to remain with us. The fact that a certain amount of both ringspot and yellows viruses was present in the experimental planting in the rootstocks is nevertheless significant.

### Mazzard Rootstock.

Mazzard seeds obtained from the main seed source in Virginia when planted in the greenhouse in several replicated samples of fifty each rarely

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gave seedlings with tatter-leaf symptoms. When seeded on a much larger scale in the nursery experimental planting, occasional plants showed symptoms of this abnormality. The occasional and itinerant nature of the occurrence in the seedlings, when considered in connection with the virus-free budwood, indicates that either seeds or seedlings occasionally harbor the virus. However, the possibility of the virus' coming from the surrounding environment has not been excluded.

Seeds gathered from diseased Mazzard trees and from other virus-infected cherry trees, when grown in the greenhouse after cold treatment to break dormancy, had a much higher mortality (over ninety per cent) than seeds from apparently healthy Mazzard trees (of about fifty per cent). This indicates that a variable proportion of the seeds on virus-infected trees are devitalized by the virus to account for the higher mortality. It also suggests the possibility of virus transmission through the seeds in at least a few borderline cases. The low occurrence of symptoms in the samples from affected trees, where mortality is high, summarizes rather well our present knowledge on the role of the rootstock in virus disease initiation in the nurseries.

Table 2 summarizes the results of observations made at the Dansville experimental planting on the Mazzard rootstock samples planted in 1942. In the experimental planting, which was well isolated from wild prunus species, a relatively small number of abnormal plants were encountered in the first growing season. The percentage of abnormal plants was higher for imported than for home-grown seeds, yet all are supposed to have come from the same seed source. Since tatter-leaf virus symptoms appeared the first season on occasional seedlings in several of the samples planted, this is circumstantial evidence that the virus is seed-borne. That the same seedlings showed more symptoms the second growing season than the first is good evidence of spread. All seedlings in the plantings were budded to Montmorency in August. Subsequent observations revealed that a large percentage of the buds failed to unite, grow or survive, especially on Mazzard seedlings showing tatter-leaf symptoms. The seedlings on which the buds failed to take were rebudded the following season, again without success. From results such as these it is concluded that the presence of abnormalities of whatever kind may be in part if not largely responsible for the greater difficulty experienced by nurserymen in getting as good

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- 50 Celtis Occidentalis
- 20 Celastrus Orbiculata
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- 200 Juglans Cordiformis, Japan
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- 50 Kentucky Coffee Tree
- 10 Kudzu Vine, Pueraria Thunbergiana
- 15 Laburnum Vulgare
- 20 Laurocerasus Caroliniana, Cherry Laurel
- 10 Morus Alba Tartarica, Russian Mulberry
- 20 Magnolia Glauca
- 10 Mahonia Aquifolium
- 2 Actinidia Polygama, Silver Vine
- 100 Prunus Americana
- 200 Prunus Mahaleb
- 50 Prunus Myrobalana

### No. Lbs. — CLEAN SEEDS

- 50 Prunus Avium, Mazzard
- 100 Pyrus Usuriensis
- 100 Pyrus Serotina
- 25 Platanus Orientalis
- 1,000 Quercus Palustris, Pin Oak
- 1,000 Quercus Coccinea, Scarlet Oak
- 1,000 Quercus Rubra, Red Oak
- 20 Rosa Wichuriana
- 20 Rosa Setigera
- 10 Rosa Lucida
- 10 Rosa Nitida
- 10 Rosa Humilis
- 10 Rosa Rubiginosa
- 10 Rosa Rubifolia
- 10 Rosa Rugosa
- 20 Rhodotyphus Kerrioides
- 20 Rhamnus Cathartica
- 20 Rhamnus Frangula
- 15 Rhus Cotinus
- 15 Sophora Japonica
- 20 Sorbus Aucuparia
- 20 Sorbus Americana
- 20 Styx Japonica
- 5 Syringa Vulgaris
- 3 Syringa Vulgaris Alba
- 2 Syringa Jovisakae
- 15 Sambucus Racemosa, Red Elder
- 50 Taxodium Distichum
- 15 Viburnum Opulus
- 20 Viburnum Lantana
- 10 Viburnum Americana
- 10 Viburnum Opulus Sterilis
- 50 Wistaria Sinensis, Chinese Purple
- 20 Wistaria Sinensis, Chinese White
- 20 Asparagus, Paradise
- 20 Asparagus, Mary Washington
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## PRINCETON NURSERIES

of PRINCETON, N. J.

**SUPERIOR**

**Hardy Ornamentals**

stands of Montmorency on Mazzard as on Mahaleb roots.

### Prunus in Fence Rows.

The four wild prunus species, *P. virginiana*, *P. pennsylvanica*, *P. serotina* and *P. americana*, found most commonly along fence rows of nurseries were indexed on peach seedlings and Montmorency cherry. Out of five trials on two occasions a ringspot virus was demonstrated present, although masked, on chokecherry. Once it was definitely isolated from *P. pennsylv-*

## PEONIES

Send us your want list for quotation or ask for wholesale list.

## THE COTTAGE GARDENS

N. I. W. Krick  
Lansing 15, Mich.

## HARDY NATIVE FERNS

See advertisement in September 15 issue.

**WILLIAM CROSBY HORSFORD**  
Charlotte, Vt.

vanica. In no case was the yellows virus recovered from symptomless chokecherry, because it always produces chlorotic spots or rings on this plant. Also none of the other cherry viruses were located in the fence rows by the indexing techniques. The relatively infrequent occurrence of the cherry viruses in the wild prunus species has two interpretations of which

that of escape from cultivation into the wild cannot be ignored.

### Program of Action.

With the scion problem a local one and that of rootstocks an interstate one, it would seem logical for the nurserymen to sponsor work of an interstate nature on the propagation of disease-free cherry trees. There is a crying need for a better definition of growth types by experiment station workers, taking into account not only horticultural merit, but also disease and insect resistance. Foundation plantings should be encouraged in the several states where certified disease-free scion and rootstock materials are made available to nurserymen. In essence the same problems confront the fruit growers as were faced and apparently solved some time ago by the potato growers. It is possible that the time will soon come when the horticultural inspection service will serve the growers when new orchards are planted with the view of eradication such as was practiced starting over a third of a century ago in combatting the yellows, little peach and rosette virus diseases of peaches. What the nurserymen need and should sponsor is a program of action to free the nurseries and the orchards from virus diseases.

### FOR GROSSE POINTE SHOW.

In connection with the twenty-ninth annual show of the Grosse Pointe and Eastern Michigan Horticultural Society, the Grosse Pointe Review published a 6-page special garden section as a supplement to its issue of September 6. Edited by Tom Pearson, it contained a wide variety of articles by capable writers on garden topics, together with a considerable volume of appropriate advertising. Making a quite respectable showing for a community the size of Grosse Pointe park, this garden section had the support of some members of the Detroit trade.

The committee in charge of the show consisted of Stanley Davies, chairman; Robert Stewart, William C. Jones, David Maiden, Roy G. Berry, Garfield Thomas and Tom Pearson, the last-named director of publicity.

Combined with the show was the victory harvest show. The president of the Grosse Pointe Victory Garden Council is Vincent R. DePetrus.

**CAPT. WILLIAM E. FOWLER**, of the Sylvania Nursery, Youngstown, O., has returned home after three years in the service.

## FRUIT TREES

We offer for fall 1945 and spring 1946 delivery the following list of Fruit Trees in the following grades and varieties subject to how they make up. Prospects are very good at this time for a nice crop. All trees are first-class quality and up to grade. Orders accepted subject to any injury or loss from causes beyond our control. We are careful to keep varieties labeled true to name and will replace on proper proof any stock that may prove otherwise, free of charge, or refund the purchase price, but it is mutually agreed that we shall not be liable for any amount greater than the purchase price paid us.

**No claims will be considered unless made in writing within ten days after receipt of goods.**

**Terms: (3%) Three per cent discount and free packing for cash with order; (2%) Two per cent ten days, or 30 days net from date of invoice. Open accounts to those with approved credit ratings. (25%) Twenty-five per cent cash required before shipment on C.O.D. orders. Packing charges at cost on open account and C.O.D. orders.**

We suggest you get your orders in promptly, as our supplies are limited in fruit trees. For general ornamental list, refer to our 4-page advertisement in the September 15 issue.

### APPLE WHIPS (One-Year Grafts)

	Per 10	Per 100	Per 1000
18 to 24 inches.....	\$2.00	\$17.50	\$150.00
2 to 3 feet.....	2.50	22.50	200.00
3 to 4 feet.....	3.00	27.50	250.00
4 to 5 feet.....	3.50	32.50	300.00

#### Varieties:

5,000 Apple, Anoka	2,700 Apple, Jonathan
10,000 Apple, Delicious, Double Red	3,000 Apple, Stayman Winesap
9,000 Apple, Delicious, Yellow	2,700 Apple, Yellow Transparent
	7,000 Apple, Winesap

### JUNE BUD PEACH

	Per 10	Per 100	Per 1000
6 to 12 inches.....	\$0.90	\$ 8.00	\$ 70.00
12 to 18 inches.....	2.00	15.00	125.00
18 to 24 inches.....	2.25	20.00	180.00
24 to 30 inches, 5/16 to 7/16-inch.....	3.00	27.50	250.00
24 to 30 inches, 7/16 to 9/16-inch.....	3.75	35.00	325.00
30 to 36 inches, 5/16 to 7/16-inch.....	4.00	37.50	350.00
30 to 36 inches, 7/16 to 9/16-inch.....	4.50	40.00	380.00
3 ft. and up, 7/16 to 9/16-inch.....	5.00	45.00	400.00
3 ft. and up, 9/16 to 11/16-inch.....	6.00	55.00	500.00

#### Varieties:

7,300 Peach, Belle of Georgia	40,000 Peach, Hale Haven
1,300 Peach, Brackett	10,000 Peach, Red Haven
5,000 Peach, Champion	3,900 Peach, South Haven
1,400 Peach, Carman	5,000 Peach, Polly
50,000 Peach, Elberta	5,300 Peach, Red Bird
3,900 Peach, Early Elberta	1,100 Peach, Red Nectarine
3,700 Peach, Early Hiley	8,000 Peach, Rochester
30,000 Peach, Golden Jubilee	8,000 Peach, Shippers Late Red
10,000 Peach, J. H. Hale	

### APRICOT AND PLUM, ASSORTED JUNE BUD

	Per 10	Per 100
12 to 18 inches.....	\$2.50	\$20.00
18 to 24 inches.....	3.50	30.00
2 to 3 feet.....	4.50	40.00
3 to 4 feet.....	6.50	60.00
4 to 5 feet.....	8.50	80.00

#### Varieties: (Apricot)

5,000 Apricot, Moorpark
4,000 Apricot, Superb
9,000 Apricot, Unnamed
800 Apricot, Early Golden

#### Varieties: (Plum)

2,000 Plum, Damson
1,600 Plum, Red June
1,500 Plum, Abundance
2,000 Plum, Bruce
1,900 Plum, Kelsey
800 Plum, Early Golden

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Smithville, Tenn.

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with the blooming time set back, so they bloom after the danger of frost is past.

If interested in raising these Frost-proof Apples, write to

**MAX NURSERY** Mineral, Va.

# Some Out-of-the-Ordinary Plants

By C. W. Wood

At the risk of censure from some readers of this department of the American Nurseryman, who seem to disapprove of mention of plants which are not yet readily available, I am devoting space in one issue to material which may need some searching to locate sources of supply. I have waited until the end of the war, thinking that English and continental European seedsmen would again be able to supply seeds. I need not caution you, however, that some of the kinds to be mentioned are never easy to find. But that is a challenge which will be accepted by all keen plantmen. I promise, however, to return to more readily available material.

Writing this at the beginning of autumn, my thoughts naturally turn to plants which have given me pleasure at this season and, again naturally, stop at one, *Brassica insularis*, a plant of much charm as autumn slips into winter. It commences life like any other cabbage—in fact, it is only the wild cabbage of Corsica—by making a great mass of leaves, gray-green in color, and is then not too exciting, but as its second year is on the wane it sends up a towering stem, commencing in autumn to produce large, white, intensely fragrant flowers, which continue to open long after severe frosts. Here in northern Michigan it grew five or six feet tall, though it is said to exceed eight feet in very fertile soil in a more congenial climate. It blooms so late that it does not produce seeds this far north, though it should do better farther south. In any case, it is little more than a biennial and not too hardy here. It is an unusual plant that would interest the curious, as well as the seeker after unusual effects in the autumn garden.

Once in two blue moons one will find seeds of *Dianthus fruticosus* advertised in European lists. If that happens to you and you are a seeker after the unusual, do not wait a moment to order it. More than likely the resulting plants will be some form of the ubiquitous Deptford pink, *D. armeria*, but continued search will probably reveal one of the most interesting and most valuable of clusterheads, the subject of this paragraph. Its home in the hot rock faces of Greece no doubt accounts for its inability to stand some of our northern Michigan winters and tells the gardeners in northern

states to watch to its winter protection. Its habit of growing on rocky ledges and cliff sides also tells us to give it similar situations in the garden. And after one has followed the clue, he will be willing to admit that the long, floppy flower stems, growing from a low, rounded, glaucous bush, which in turn proceeds from a woody stem, and producing dense clusters of purplish flowers long after other pinks have put aside their labors, were worth the search. All that I have grown have had dark red flowers carrying so much blue in their make-up that they were a rather dull purple, the worst drawback in an otherwise desirable plant, though its lack of fragrance might also be counted against it. I have read, however, that flowers of a warm red shade have appeared in European nurseries; so we can only hope for them to show up on this side of the ocean. Its greatest value, it seems to me, is its late flowering, which it often continues right up to late autumn.

The sedges are not made much of by gardeners. Generally speaking, good judgment is shown when they are ignored; but like every other rule, this has exceptions. And in this case the exceptions are fine examples of plants which would find much favor with gardeners if they (the garden-

ers) knew such plants existed. Until we investigate the genus, we are likely to think that all sedges conform to the family pattern of looking like dull grasses; nothing could be farther from the truth, however, because some, as in the case of our native *Carex fraseri*, have wandered so far from the pattern that they give lovely effects in the garden. For instance, the one mentioned above, with its broad, dark green leaves of leathery texture, could easily be taken for a small aspidistra. It is a splendid ornament for a moist shady spot and a plant that attracts immediate attention. There is another sedge, *C. scaposa*, highly spoken of by English gardeners, which we should have. It is said to resemble *C. fraseri*, except that it has pink flowers in spring, instead of the ivory-white of the latter, and is also said to require the same growing conditions. Then there is *C. montana* from the mountains of Europe, which makes a pleasing summer-long green mat, turning red in autumn to make a season-long delight in its partly shaded home.

For a pleasant experience I can think of nothing more intriguing than the collecting of linarias. There would be some disappointments if one depended upon catalog descriptions, because their makers often become overenthusiastic, mix their

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On lots of 50,000 roots of **CHIPMAN'S CANADA RED RHUBARB** or other similar varieties.

This is for stock for propagation and must be true to name of variety.

Quotations should state the F.O.B. point and the approximate packing and shipping costs.

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Gem, Lucky Strike, Mastodon, Evermore (Minn. 1168).....	.75	2.50	5.00	18.00
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No extra charge is made for the package or packing on Strawberry plant orders.

Prices quoted are for delivery October 15, 1945, to June 1, 1946, and apply as follows:

- 25 to 75 plants of one variety at the 25 rate.
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Our Asparagus roots have made a particularly good growth this season. We are the largest growers of Asparagus roots in the country. Write for special prices on large numbers.

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3-year, No. 1 grade.....	.75	2.50	5.25	18.00

## RHUBARB ROOTS

	Per 25	Per 100	Per 250	Per 1000
Victoria and Myatt's Linnacus.....	\$3.00	\$8.50	\$20.00	\$75.00
1 1/2 to 2-in. cal.....	2.50	6.00	14.00	50.00
1 to 1 1/2 in. cal.....	2.00	5.00	11.00	40.00
3/4 to 1-in. cal.....	1.75	4.00	9.00	30.00

## GRAPE VINES

Grape vines are another specialty with us. Our Grapes have heavy fibrous root systems, with many lengthy canes at the top. Write us for prices on large numbers.

	Each	Per 10	Per 100
Concord (Blue), 2-yr., No. 1.....	\$0.25	\$1.75	\$14.00
Concord (Blue), 1-yr., No. 1.....	.30	1.50	10.00
Catawba (Mahogany), Fredonia (Black), Moore's Diamond (White), Moore's Early (Black), Niagara (White), Portland (White), Worden (Black), 2-yr., No. 1.....	.30	2.25	17.00
1-yr., No. 1.....	.25	1.75	12.00
Agawam (Red), Brighton (Red), Caco (Red), Delaware (Red), 2-yr., No. 1.....	.35	2.50	20.00
1-yr., No. 1.....	.30	2.25	15.00

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	Per 100	Per 1000
Allemania, Ambassador, California, Charles Henderson, Egandale, Firebird Florence Vaughan, Golden Gate, Hungarian, Indiana, Kate Grey, Louisiana, Madam Croz, Pennsylvania, Richard Wallace, Shenandoah, Uncle Sam, Wintzer's Colossal, Yellow King Humbert, Wyoming.....	\$7.00	\$55.00
Copper Giant, Red King Humbert, King Midas, Louise Cayeux, President.....	8.00	60.00

All quotations are F.O.B. Selbyville, subject to stock being sold upon receipt of order. Free packing for cash with order on Asparagus, Rhubarb, Grapes and Cannas.

Our Fall 1945 Wholesale List is just off the press, offering a complete line of stock, including fruit trees, small fruit plants, garden roots, evergreens, shrubs, shade trees, bulbs, etc. etc. Write for a copy if you are not on our mailing list. Please use your printed stationery when requesting wholesale prices.

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Box 3 Selbyville, Delaware

terms when it comes to telling the plants' life spans and apparently pull their names out of a hat. Notwithstanding all that, one would run into many heart-warming experiences and might find some plants of more than passing interest. If he found the southern European Linaria purpurea he would have a plant of not a little landscape value and one that is seldom seen in gardens. For obvious reasons inherent in most linarias, it is not a plant for general planting, but it does possess certain qualities, including a spirelike growth to three feet and a long blooming season, which should endear it to makers of landscape pictures. For instance, it is splendid for interplanting in iris and peony borders, where color is so long absent. Its rather sparse foliage never interferes with the growth of its companions and its long period of flowering, covering most of the time from June to October, if the main spike is cut out when it is through blooming, gives color to its section of the garden throughout the summer. Although the color, a bright purple, might be objectionable to some, not many would find fault with it in certain associations or alone in large colonies.

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also smaller sizes.  
Beautiful stock B&B.

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Also Tamariscifolia, various Pines, Concolor Fir, Colorado Blue Spruce, Colorado Silver Cedar, etc.

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4 to 5 ft., trans.....	\$13.50	\$120.00
5 to 6 ft., trans.....	20.00	175.00
6 to 8 ft., trans.....	45.00	.....
8 to 8 ft., 3/4 to 1-in. cal., whips, per 100, \$25.00; 8 to 10 ft., 3/4 to 1-in. cal., well branched, per 10, \$10.00; per 100, \$85.00; 8 to 10 ft., 1 to 1 1/2-in. cal., well branched, per 10, \$12.50; per 100, \$100.00; 1 1/2 to 2-in. cal., write for prices.		

Free baling with cash with order. 25 per cent cash with order, balance before shipment. All trees are Jap Beetle Quarantine inspected.

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ROSES, Hybrid Teas

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Pinkish-white flowers in May

Heavy pot-grown stock for lining out. Spring 1946 delivery.

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2 1/2-in. pots.....	\$25.00	\$225.00

F.O.B. Dayton, Ohio.

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**THE SIEBENTHALER COMPANY**  
Dayton 5, Ohio

No micromeria that I have grown is a showy plant, the flowers being rather inconspicuous, as one would suspect from the generic name, which means small part. The micromerias qualify for our present purpose, though, because of their unusualness and for other characteristics which will be mentioned later. Like many labiates—they are near relatives of the thymes—they have intensely fragrant foliage and would be useful on that account alone, but they are also esteemed for the habit of blooming in July and August, when even the smallest flowers are welcome. Try planting *M. croatica*, *M. filiformis* or *M. piperella* along a wall as near the line of vision as the height of the wall permits if you want to show them off to your customers to the best advantage. Or plant them along a path where passing will induce them to give off their delightful scents. Like many of their kind, the three mentioned above are miniature shrubs (herbaceous this far north) growing about six inches tall, the first with near-white flowers, the second with rosy-pink flowers and the last of a bright pink shade, from July onward, sometimes carrying a little color into autumn. They are, however, usually past their prime by the middle of August. One of my favorites is *M. rupestris*, being especially valuable because of its hardiness in a race of near-hardies and a long blooming season, often from July until frosts, and the general appearance of a small heather. It grows up to ten inches in height and bears its small white flowers along several inches of the stems. More than sixty kinds appear in the floras, but few are regular articles of commerce. All that I have had delight in a light, well drained soil and in a sheltered sunny situation. They are easily grown from seeds and from cuttings of new growths rubbed off with a heel when two or three inches long.

The prophet flower, *Arnebia echioides*, is not often seen in American gardens, much to the loss of our early spring plantings. Although it comes from southwestern Asia, to which we of the north look for tenderness, it proved to be quite hardy here and should go safely through the winter in most sections, especially if it has a blanket of snow. Some of the disappointments experienced by amateurs in this country, as expressed in the amateur press, come no doubt from slavishly following the recommendations of English writers, who usually say that the plant wants full sun. That may be the case on that sunless island, but

it is severe treatment in the hot climate of the middle west. On the other hand, I have found that it does much better in shade, at least from noon onward, and is especially good on a north slope or along an east or northeast wall. One reads of it blooming in England from May until November; here its flowering season seldom covered more than late April, May and early June. It makes a mass of pretty green leaves, which serve as a background for a number of 8-inch to 12-inch stems, each bearing a scorpoid raceme of showy yellow flowers. These have five black spots in the throat, which fade with age, leaving the flower a uniform pale yellow. It may be grown from seeds without much difficulty and the Standard Cyclopedia of Horticulture also mentions root cuttings.

If one has formed the opinion that all achilleas are more or less weedy, a not infrequent conclusion if one's experience has been confined to the common yarrow, *Achillea ptarmica*, and other rampant spreaders, the Balkan species, *A. clypeolata*, which is the subject of this note, will correct that erroneous impression. The only reason that ordinary achilleas are considered weedy is their

desire to cover the earth. The present plant is not made along these lines, if a specimen I had in my garden for more than ten years is a basis for judgment. That experience tells me that the plant should become popular when it is generally available, which it should be when the European seedsmen get back in the market.

Its tufts of silvery ferny foliage are excitingly lovely ornaments from spring until fall, not only as a background for the large flat heads of canary-yellow flowers on 18-inch to 2-foot stems (perhaps taller in fertile soil) throughout the summer, but also for their own lovely selves and for their charm and grace as companions to the stiff subjects found in all borders. Combine the foregoing good plants with the plant's non-spreading habit and it is not difficult to see its possibilities. Fortunately, it was as easily grown here as any other yarrow, being satisfied in a fully sunny situation without any special care. It would probably resent a heavy soil if drainage were not looked after, but that is characteristic of most silver-leaved plants and gardeners have learned to accept it as a part of these subjects. Cuttings taken in summer afford a ready

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CASHTOWN, OHIO

means of increase, and division in spring or fall may also be followed.

Although I knew lupine long before I made the acquaintance of thermopsis, which the learned tell us is Greek for lupinelike, the familiarity with the former did not spoil me for the other. In fact, the better kinds of thermopsis are more than a good substitute for the capricious lupine, which is more or less of a problem in my soil. Of the native species, *T. caroliniana* seems to be the only one that has made much impression on gardeners, and it deserves every attention it has received. Its cloverlike foliage adorns a 4-foot plant, making a pretty ornament without flowers. When the latter, large yellow pea-shaped flowers in foot-long racemes during June and July, are in evidence one has a plant that should satisfy the most exacting. It is usually relegated to the wild garden, where it is one of the most spectacular of the summer bloomers, but everything about the plant fits it for prominent roles in the hardy border among the choicest company. And it is also splendid for cutting.

Two western American species, *T. montana* and *T. rhombifolia*, are not without merit as garden plants, though they can scarcely be compared with the first named for general planting, if their behavior in my garden is a good basis for judgment. I have grown the last one in the rock garden, its height of eight inches being in keeping with that scene and its bright yellow flowers for six or eight weeks in early summer brightening its part of the garden at that season. *T. montana*, on the other hand, is much too vigorous for the rock garden and, although it cannot compete with *T. caroliniana* as a garden plant, I have, however, admired it on the few occasions that I have grown it and I have no doubt that its long spikes of yellow flowers in late spring would interest gardeners on the search for unusual plants.

The two western species mentioned, being spreaders, are easily grown from divisions; the eastern one is probably best grown from seeds. Since it is often difficult to germinate unless seeds are sown immediately after ripening, most growers practice fall sowing in an outdoor frame. I have, though, had good results from planting one or two seeds in a thumb pot of granulated peat and plunging the pots to the brim in a bench in early spring. If the latter plan is followed, a nicking of the hard seed coat will hasten germination.

**EVERGREENS**—In a large assortment of Thuja, Juniperus, Chamaecyparis and Taxus.

**LARGE SIZES**—Cryptomeria, Arborvitae, Pine and Moss Cypress.

**SHADE TREES**—Linden, Norway Maples, Oriental Planes, Oak and Ginkgo.

**ORNAMENTAL**—Flowering Cherries, Crab Apple and Beeches, named varieties.

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Half Hollow Hills  
P. O. Huntington Station, N. Y.

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Division of Seabrook Farms

Wholesale Nurserymen

BRIDGETON, N. J.

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Write for wholesale price list of lining-out and specimen stock in better evergreens and shrubs.

Nursery Stock at  
Wholesale Only.



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Leading wholesale source for  
Nursery Stock.  
Send us your Want List.

**C. R. BURR & CO., INC.**  
Manchester, Conn.

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Write for prices on our fall stock.

**CURTIS NURSERIES**  
CALICOON NEW YORK

## PRIVET and BERBERIS

Splendid Stock

Write for Special Quotations

**LESTER C. LOVETT**  
MILFORD DELAWARE



# Trade Meetings

## MEETING CALENDAR.

For the benefit of state association officers who wish to set the time of midwinter meetings with the minimum of conflict, the following list is given of meeting dates already made known. Secretaries of other associations are invited to notify the editor of further meeting dates as they are set.

December 3 and 4, 1945, Minnesota State Nurserymen's Association, Hotel Lowry, St. Paul.

December 5 and 6, Wisconsin Nurserymen's Association, Hotel Schroeder, Milwaukee.

January 2 to 4, 1946, Indiana State Nurserymen's Association, Purdue University, West La Fayette, Ind.

January 3 and 4, Western Association of Nurserymen, Hotel Muehlebach, Kansas City, Mo.

January 11 and 12, Iowa Nurserymen's Association, Des Moines.

January 15 to 17, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 22 and 23, short course for nurserymen, Ohio State University, Columbus.

January 24 and 25, Ohio Nurserymen's Association, Neil House, Columbus.

January 29 and 30, Kentucky Nurserymen's Association, Lafayette hotel, Lexington.

January 31 and February 1, Michigan Association of Nurserymen, Detroit.

## VIRGINIA MEETING.

At the summer meeting of the Virginia Nurserymen's Association, held September 6 and 7, at the Pinewood hotel, Virginia Beach, Va., Fred Leissler, of Leissler's Sterling Nursery, Fairfax, was elected president; Bert Shoosmith, of the Southside Nurseries, Richmond, vice-president, and A. S. Gresham, of Gresham's Nurseries, Richmond, secretary-treasurer.

After registration had been completed the meeting was called to order by the president, Shelby N. Griffith, Richmond. A. G. Smith, Jr., of the Virginia Polytechnic Institute faculty, welcomed the members in a short address. This was followed by an enlightening discussion presented by Willard J. Hines, supervising interviewer of veterans employment of the United States Employment Service. Mr. Hines' speech was of such timeliness that it assumed round-table character with most of the membership taking part.

Richard P. White, executive secretary of the American Association of Nurserymen, discussed the "High Lights and Values of the A. A. N.

News-letter." Mr. White pointed out that few nurserymen realize the full value of the news-letter and consequently have not received the maximum of benefit available. He explained how the letter could best be used. Mr. White was followed on the program by C. A. Reed, associate pomologist of the United States Department of Agriculture, Beltsville, Md., who presented an interesting discussion on "Nut Trees for Virginia Gardens." Mr. Reed brought along many samples and photographs and a series of slide movies to illustrate his presentation.

After a luncheon in the Pinewood dining room, the meeting recessed until 3 p. m., at which time Samuel H. Thrasher conducted a tour through the old Thorogood house, on Lynnhaven Bay, pointing out the main features and facts of historical

nature. The members then proceeded by motorcade to Greenbrier Farms, Inc., Norfolk, where they were treated by Mr. Thrasher to a delicious barbecue, followed by a program of musical entertainment and dancing. Music was furnished by Norman Phelps' band.

Friday morning, the meeting was called to order by the president and after the reports of the various committees were submitted, Mr. Hines again addressed the membership on "The Veterans' Rehabilitation Program," calling attention to its nature and its application by Virginia nurserymen. Fred L. Heutte, landscape architect, of Norfolk, Va., and president of the Tidewater Rose Society, spoke on "Better Planting Practices." Mr. Heutte called attention to the desirability of a careful choice of materials by nurserymen in the home landscaping boom which

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61 years  
600 acres

Charles City, Iowa

## Northern-grown Stock

Send  
for  
Price  
List.

J. V. BAILEY NURSERIES  
St. Paul 6, Minn.



Wholesale growers of the best  
Ornamental Evergreens,  
Deciduous Trees,  
Shrubs and Roses.  
Write for our current trade list.

THE KALLAY BROTHERS CO.  
Painesville, Ohio

## Old English BOXWOOD

(Wholesale Only)  
All slow-grown dense specimens. Red clay soil.  
Priced by height and spread. 18x12 ins. to 24x22  
ins. in unlimited quantities. Also large specimens  
up to 5 ft. Write for price list.

BOXWOOD GARDENS

Mrs. R. P. Royer High Point, N. C.

## ELMS

American  
Moline  
Vase

In large quantity up to and  
including 1½ inches.

## SHRUBS

Assortment in quantities of the  
better varieties. Truckloads or  
carloads.

Write us your requirements.

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Box 1 Addison, Ill.

## ROSEBUSHES

More Scarce Than Last Season.

WE HAVE  
300,000

They Won't Last Long.

Write for list and quotations.

OZARKS PLANT FARMS, INC.  
530 S. Kimbrough Ave.  
Springfield, Mo.



## EVERGREENS

Growers of Quality Evergreens  
Lining-out Stock a Specialty

Write for Trade List

EVERGREEN NURSERY CO.  
Established 1864 : STURGEON BAY, WIS.

## EVERGREEN LINERS

Taxus, many varieties.  
Seedlings and transplants.

Ask for our latest price list.

HEASLEY'S NURSERIES  
Freeport Road, Butler, Pa.

## C. M. Hobbs & Sons, Inc.

BRIDGEPORT INDIANA

Established 1875.

WHITE-FLOWERING  
DOGWOOD

GINKGO

NORWAY MAPLE

SOFT MAPLE

SWEET GUM

THURLOW WILLOW

WELL GROWN EVER-  
GREENS, in variety.

In Illinois, Indiana, Missouri, Kansas  
and the Southwest

## Fall Landscape Plantings

are under way and we are furnishing  
truckloads and carloads of choice  
Evergreens for them. Get yours. Do  
not delay. There are customer satisfac-  
tion and good money waiting for you.

Wholesale Only.

VERHALEN NURSERY COMPANY  
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## EVERGREENS

We have a surplus of

PFITZER JUNIPERS

BERCKMANS GOLDEN  
Arborvitae

BAKER PYRAMID Arborvitae

SAVIN JUNIPERS

All extra-fine quality. Write for prices.

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Book orders early.

SPECIMEN EVERGREENS  
SNEED NURSERY COMPANY

P. O. Box 798

Oklahoma City, Okla.

## EVERGREENS

Lining-out stock  
For fall 1945 and spring 1946.  
Write for list.

SUNCREST EVERGREEN NURSERIES  
Johnstown, Pa.

We have a substantial surplus of ornamentals:  
SHRUBS, SHADE AND FLOWERING TREES  
Send your Want List for quotations.

PONTIAC NURSERIES  
Romeo, Mich.

appears to be inevitable. The meeting  
was adjourned for luncheon. Grover  
C. Outland, Norfolk insurance ex-  
ecutive and member of Virginia  
House of Delegates, entertained the  
members with a series of interesting  
stories and anecdotes.

Max C. Lindsay, Sec'y.

## KENTUCKY OUTING.

The summer picnic meeting of the  
members of the Kentucky Nursery-  
men's Association and their families  
was a huge success again this year,  
reports Howard G. Tilson, secretary.  
It was held at Mammoth Cave Na-  
tional Park, August 29 and 30, and  
fifty-one persons attended. No for-  
mal program was planned. The  
members and guests ate together,  
played together and visited the  
caves and other points of interest.  
Charles Michler conducted a tour  
through the park and gave an inter-  
esting discussion on native plants and  
their identification.

The executive committee of the  
association decided that the winter  
meeting would be held January 29  
and 30 at the Lafayette hotel, at  
Lexington.

## KANSAS CITY GROUP MEETS.

About twenty-five members of the  
Kansas City Association of Nursery-  
men were guests of the Willis Nurs-  
ery Co., at Ottawa, Kan., Septem-  
ber 11.

First watermelon was served in one  
of the company's storage houses. This  
was followed by a trip through the  
nurseries, including the extensive  
evergreen fields.

In the evening a steak dinner was  
served at the North American hotel,  
topped off by fresh strawberries from  
the company's berry patches. Since  
this was a regular meeting date of  
the association, President Charlie  
Williams conducted a short business  
session after the dinner. Plans were  
discussed for the meeting of the  
Western Association of Nurserymen  
in January.

Stanley McLane, J. C. Nichols Co.,  
real estate developers, Kansas City,  
read a statement from the company's  
president which indicated that he  
did not expect home building to be  
resumed on a large scale until some  
time next year. Deterrents are the  
present federal limitation of \$8,000  
on land and home, the lack of suit-  
able building materials and the short-  
age of labor.

The next meeting of the Kansas  
City association will be held Octo-  
ber 9.



Growers of a complete  
line of deciduous and  
coniferous species.

JEWELL NURSERIES, INC.  
Lake City, Minn.

**Boyd**  
NURSERY COMPANY

McMinnville, Tenn.

ORNAMENTAL SHRUBS  
SHADE TREES, VINES  
FOREST TREE SEEDLINGS  
LINING-OUT STOCK

## JUNIPERUS VIRGINIANA

Seedlings	Per 100	Per 1000
4 to 6 ins.	\$1.25	\$ 8.00
6 to 9 ins.	1.50	12.00
9 to 12 ins.	2.00	16.00
12 to 18 ins.	3.00	25.00
18 to 24 ins.	6.00	50.00
Selected Understocks	4.00	35.00

10 per cent discount on 10,000 lots.  
No charge for packing if cash is sent  
with order.

EVERGREEN GARDEN NURSERY  
McMinnville, Tenn.

## SHEPARD NURSERIES

Growers and Distributors of  
ORNAMENTAL NURSERY STOCK  
60 acres growing. Skaneateles, N. Y.

Ornamental Trees, Shrubs  
and Evergreens

Write For Our Wholesale Trade List  
W.-T. Smith Corporation  
Telephone 2689 GENEVA, N. Y.

# This Business of Ours

*Reflections on the Progress and Problems of Nurserymen*

*By Ernest Hemming*

## TO NEW EMPLOYEES.

I wonder how much we employers would resent it if, upon interviewing a prospective employee, particularly for an executive or semiexecutive position, the prospect should ask to see our financial statement.

Nine times out of ten the man would probably be thrown out. Yet, if I were seeking such employment, the financial position of the firm would be one of the first things I should want to find out. As long as we have to obey the laws of economics—sociologists, labor leaders and bureaucrats notwithstanding—that subject is of the utmost importance.

Have you known among your acquaintances men who were intelligent, ambitious and industrious, and yet never seemed to get very far? Invariably, it is a good bet that they were working for a sick business. Perhaps they stayed on out of misplaced loyalty or lack of understanding of what is a sick business; or, what is more important if you think in terms of investigating first, perhaps they stayed because of inertia or hesitation in changing jobs.

Please do not understand that I would suggest that a young man absolutely refuse to work for a company running on a shoestring. But I think in such an instance, especially in our business, that he would be better off starting on his own shoestring. There is not a business anywhere that has not had its bad moments, but beware of one that has them chronically; there is no future in it.

Another thought is that size has nothing to do with this question. There are one-man businesses that are as economically sound as anything can be. There are big businesses that have one financial crisis after another, and I am willing to bet that the employee morale of such businesses is nil.

A young man might ask, what could a financial statement tell him after he had read it? It cannot tell him everything, but here are some items for which to look: The mortgage indebtedness, if any, should be less than half the assessed value of the real property, and the mortgage should be in the process of systematic reduction. There should be a cash balance sufficient for three months'

normal operations. The gross sales should be in line with the time it takes to produce the type of inventory grown and sold. It is also my feeling that the regular use of short-term credit has no place in a slow-turnover business.

Some years ago I saw a summary of the profit and loss statements of the nursery business by a mercantile agency. Upon analysis, the only item that was consistent in those firms showing a profit or loss respectively was that for those firms showing a profit the per cent of mark-up on items bought and sold was

## SMALL FRUIT PLANTS

Boysenberries, regular and thornless; Youngberries, Raspberries, Strawberries, Gooseberries, Grapes, etc.

Write for wholesale price list.  
One million Boysenberry plants annually.

**V. P. BASHAM**

Mountainburg, Ark.

## RED RHUBARBS

MacDonald  
and  
Canada Red

**ANDREWS NURSERY CO.**

FARIBAULT, MINN.

Washington Asparagus, 1 and 2-yr.

Paradise Asparagus, 1-yr.

Peonies in good assortment.

Surplus and Want List now ready.

**COE, CONVERSE & EDWARDS CO.**  
Fort Atkinson, Wis.

## RHUBARB

Chipman's Canada Red  
25c each, No. 1 divisions.

**BASS NURSERY**  
Chadron, Neb.

high, while for those firms that showed a loss the mark-up was low. The reason is obvious in our largely hand-labor business.

I would beware of a business loaded up with dead-horse or too big salary expenses. Such a business is not vigorous and has passed its peak; if the undue expenses are continued, the business will eventually die.

The business must show a profit in normal years; otherwise it is existing on its own semiliquidation. If it is a corporation, it should pay a modest dividend. Corporations that do not are only kidding themselves. To the same extent, I should cer-

## TREE SEEDLINGS, EVERGREENS and FLOWERING SHRUBS

**DEUTZIA SCABRA**, Pride of Rochester. Per 1000  
12 to 18 inches, 1-year C. .... \$35.00  
**LIGUSTRUM AMURENSE**, Amur Privet North.  
12 to 18 inches, 3 branch. .... 40.00  
**SPIRAEA CALLOSA ROSEA**, pink.  
18 to 24-inch seedlings. .... 25.00  
**CORNUS FLORIDA**, White Dogwood, collected.  
12 to 18-inch seedlings. .... 15.00  
**CERCIS CANADENSIS**, Redbud, collected.  
12 to 24-inch seedlings. .... 15.00  
**ILEX OPACA**, American Holly, collected.  
4 to 12-inch seedlings. .... 15.00  
**KALMIA LATIFOLIA**, Mountain Laurel, collected.  
4 to 12-inch seedlings. .... 20.00  
**TSUGA CANADENSIS**, Hemlock, collected.  
4 to 12-inch seedlings. .... 12.00  
**AZALEAS**, Mixed. Colors: Red, white and pink.  
12 to 24-inch liners, collected. .... 50.00  
**MAGNOLIA ACUMINATA**, Cucumber Tree.  
Understocks for grafting. .... 45.00

**EVERGREEN GARDEN NURSERY**  
McMinnville, Tenn.

## WE OFFER

for immediate acceptance  
1-yr. Apple whip grafts.

4500 Stayman Wineap  
3500 Yellow Delicious  
2500 Red Delicious  
1000 Grimes Golden  
500 Jonathan  
500 Yellow Transparent

2 to 3 ft., \$150.00 per 1000  
3 to 4 ft., \$200.00 per 1000  
4 to 5 ft., \$250.00 per 1000

Prices are F.O.B. Nashville with boxing charged at cost.

Order now from this ad. One-fourth cash with order, balance at shipping time either in fall or spring.

**H. R. POTTER NURSERY**  
Madison, Tenn.

## WANTED

FRUIT TREE STOCKS

Apple, Pear, Plum and Cherry

Also Rose Seedlings for budding.

**STORRS & HARRISON NURSERIES, INC.**  
Painesville, Ohio



**ROLLER'S NURSERY**

Wholesale  
Rogers, Ark.

APPLE, 1-yr.	Per 1000
Under 1 ft.	\$ 40.00
12 to 18 ins.	60.00
18 to 24 ins.	90.00
2 to 3 ft.	125.00
3 to 4 ft.	150.00

JUNE-BUD PEACH	Per 1000
Under 1 ft.	\$ 50.00
12 to 18 ins.	75.00
18 to 24 ins.	125.00
2 to 3 ft.	175.00

40,000 good CONCORD GRAPES  
5c per row run.

DEWBERRIES, \$15.00 per 1000.

BLACKBERRIES, \$15.00 per 1000.

Many other bargains.  
Write for low price list.

**SMALL FRUIT PLANTS**

Offering the trade large quantities of GRAPES, BLACK RASPBERRIES, BLACKBERRIES, DEWBERRIES, BOYSENBERRIES, CURRANTS, RHUBARB, ASPARAGUS and BLUEBERRY Rooted Cuttings.

Write for quotations.

**L. J. RAMBO'S WHOLESALE NURSERIES**  
Bridgman, Mich.

## SMALL FRUIT PLANTS and VEGETABLE ROOTS

We grow for the wholesale trade only.

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Bridgman, Mich.

## FRUIT TREES AND SMALL FRUITS

**HARRISON BROTHERS NURSERIES**  
G. Hale Harrison, General Manager  
BERLIN, MARYLAND

**SMALL FRUIT PLANTS**

Evergreens — Shrubs  
Asparagus — Rhubarb  
Send for Complete Trade List  
**W. N. SCARFF'S SONS**  
New Carlisle, O.

tainly shy away from a business that made unusual profits (if such a thing ever occurs in the nursery business), for such a business is also in semi-liquidation or has some advantages that certainly will not last, or the profit is at the expense of some other factor.

So if you are going to work for a new firm, at least keep your eyes open as to its financial status, and if you do not, do not blame the other fellow five to ten years from now. E. S. H.

**NORTHWESTERN NEWS.**

Paul Wilkinson, formerly with the Henry Field Seed & Nursery Co., Shenandoah, Ia., but now owner and operator of a florists' and nursery business at Pierre, S. D., was at Chicago the second week in September on business. Paul's many friends in the trade will be pleased to learn that he is enjoying a splendid florists' business over a territory extending 100 miles from Pierre.

Ray Rice, of Maxwell-Bowden, Inc., Geneva, N. Y., was at Shenandoah, Ia., September 15. On his return trip he made business stops in Chicago and Michigan.

H. W. Riggert, president of the Wisconsin Nurserymen's Association, met with Secretary Thomas S. Pinney and Vice-president Ed Eschrich at Milwaukee, September 14, to make preliminary plans for the association's winter meeting, which will be held at the Hotel Schroeder, Milwaukee, December 5 and 6.

**SAN FRANCISCO SHOW.**

Nearly 50,000 persons viewed the exhibits of amateurs and professionals in San Francisco's sixth annual flower show, held August 29 and 30 in the rotunda of the City Hall. Several California nurserymen were among the commercial exhibitors who received awards, although the amateurs almost stole the show with their entries. The commercial growers are still struggling with the labor shortage, even though the war is now over.

Robert McWhirter, of the Star Dahlia Gardens, San Francisco, carried off the sweepstakes of the show and also won the award for the best general display.

H. Werle, of the Bungalow Nursery, Colma, had an attractive exhibit of tuberous-rooted begonias and received first prize for each of five entries. The Bungalow Nursery also was awarded firsts in three classes for fuchsias.

Carl Salbach, Berkeley, received first prize for a display of cut gladi-

## JUNE-BUDS STILL AVAILABLE

We have just completed a field count of our Peach stock and find that we still have the following stock available:

	Per 1000
7,500 GOLDEN JUBILEE,	
24 to 30 ins.	\$250.00
10,000 REGULAR HILEY,	
24 to 30 ins.	250.00
2,500 MAYFLOWER,	
24 to 30 ins.	250.00
3,000 GEORGIA BELLE,	
24 to 30 ins.	250.00
5,000 RED HAVEN,	
24 to 30 ins.	250.00
2,500 HALE HAVEN,	
48 to 60 ins.,	
9/16	550.00
3,000 GOLDEN JUBILEE,	
48 to 60 ins.,	
9/16	550.00

We also still have Year-old Apple available as low as 10 cents per tree. Also, 500,000 (yellows-free) Blakemore Strawberry Plants at \$7.00 per 1000.

Will Welcome Inquiries as to  
1946 Grow Contracts.

**FARMERS WHOLESALE NURSERY**

Paul Patterson, Owner  
Tel. 404 P. O. Box 65,  
Smithville, Tenn.

**MCDONALD RHUBARB**

**RUBY RED**

**CANADA RED**

Order now for fall 1945  
and spring 1946 delivery

**THE FIFE NURSERY**  
Box 13 Kirksville, Mo.

**KELLY'S FRUIT TREES**

**KELLY BROS. NURSERIES, INC.**  
Dansville, N. Y.  
Since 1889

Wholesale growers of

**SMALL FRUIT PLANTS**

Grapes, Currants and Raspberries—  
our specialty.

Hydrangea P. G.

**FOSTER NURSERY CO., INC.**  
69 Orchard St. Fredonia, N. Y.

oli to cover approximately fifty square feet.

Among the exhibits of the California Nursery Co., Niles, was the new Peace rose.

Judges included nurserymen Clyde Stocking, of the Rosedale Nursery, San Jose; Carl Salbach, and Stephen Vistica.

#### CENTRAL CALIFORNIA GROUP HEARS ABOUT DD.

The September meeting of the Central California Nurserymen's Association was held September 13 at Niles. The attendance was about fifty members and guests, including two new members. For the first time in three or four years, meat replaced the usual chicken at the dinner.

President Fred Hammarstrom presided and during the evening introduced Albert Quatman and Tony Wilk, two new members. Mr. Wilk is operating the former Capital Nurseries, at Colma, under the name of the Wilk Nursery. Among the guests were Howard Kerrigan, noted pelargonium hybridizer, and Howard Gilkey, of Oakland. For years Mr. Gilkey has been the guiding hand of the Oakland flower show, which was the leading horticultural activity of northern California before the war. Mr. Gilkey announced that the show was being reorganized on a bigger and better scale than ever before and that the next show would be the week of May 1, 1946. This time was selected as it included the Sunday between Easter and Mothers' day, when folks are especially flower conscious and when there should be a large quantity of both cut flowers and potted plants. Mr. Gilkey advised that those making plans to enter the show next year keep in mind the limited space that is available and remember that costs now are about fifty per cent more than prewar costs. He said that he preferred quality to quantity.

Clyde Stocking, president of the California Association of Nurserymen, told of the plans for the state convention to be held at Los Angeles, September 24 and 25. He told of the work being done by the new executive secretary, Jack Lincke, and urged members to pay their dues, which are now due for the coming year, so that the secretary may have funds with which to operate and thus be able to devote his efforts to the interests of the nurserymen rather than to the collection of dues. Mr. Stocking also announced the new schedule of dues, which is based on the percentage of the gross business



**Introducing the NEW STREAMLINER Everbearing Strawberry**  
**EXCELLENT** — Firm shipping berry; rich, radiant red color; full strawberry flavor; good canner and freezer; heavy bearer; excellent aroma; sturdy plant with luxurious green foliage.  
Plants are available in four colors or in black and white of the new Streamliner strawberry for use in your catalogs.

#### Items to offer for 1945-46 Delivery

**BERRIES**  
RASPBERRIES  
Cumberland  
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STRAWBERRIES—October delivery.  
Banner  
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Improved Oregon  
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EVERBEARING STRAWBERRIES  
Gem  
Mastodon  
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Streamliner

**RICH & SONS NURSERY**  
Rt. 4, Hillsboro, Ore.

## Bet-er Growe

REG. U. S. PAT. OFF.

NO. 382615

### Camellia Bet-er Growe Fertilizer

Rose Bet-er Growe also available now.

**COAST AGRICULTURAL FERTILIZER CO.**  
2663 E. Foothill Blvd. Pasadena, Calif.

**CHERRY, RED RHUBARB**  
**STRAWBERRIES, RASPBERRIES**  
**BOYSENBERRIES, NECTARBERRIES**  
other **BERRIES** and **ASPARAGUS**

Write for descriptive wholesale price list.

**BRENTWOOD BERRY GARDENS**  
140 S. Carmelina Ave.  
Los Angeles 24, Cal.



**SHERWOOD NURSERY CO.**  
EVERGREENS - Propagators & Growers  
141 S. E. 65th Ave., PORTLAND 16, ORE.

#### OREGON-GROWN TREES

Complete line of Shade, Fruit and Flowering Trees, Filberts and Grapes, both American and European.

Send Want List.

**DEE LEWIS NURSERIES**  
402 N.E. 97th Ave., Portland 16, Ore.

done by each nursery, as is the case with the national association. He said that to date there were 411 paid-up members in the California association.

The speaker for the evening was Walter B. Balch, agricultural technologist for the Shell Chemical Co. Mr. Balch told of his work during the past two years in soil fumigation with DD, a new product of the Shell organizations, which is proving outstanding in the control of such soil-borne pests as nematodes, wireworms, garden centipedes and other common and less well known organisms. He explained that there are about 4,000 known species of the nematode and that his experimental work in the three west coast states as well as inland in Utah, Nevada

and Idaho showed good control not only of the well known root knot nematode, but also of the citrus, potato and stem nematodes. The control of wireworms was not yet so well proved, but with the aid of charts and pictures Mr. Balch showed the results obtained in the control of this pest as well as the garden centipede. Mr. Balch explained that all

of his field work was done in co-operation with and under the direction of various state or federal officials, such as county agents, agricultural commissioners and workers from the United States Department of Agriculture.

In the question period which followed the talk and lasted longer than the talk itself, Mr. Balch said that the Shell Chemical Co. had just completed the building of a factory for the manufacture of DD and that soon the material would be available to farmers, nurserymen, greenhouse operators and home gardeners, in sizes ranging from 1-gallon cans to 55-gallon drums and that the price would be much lower than that of any of the currently available soil fumigants. The product is easy to use and is safe to handle without the need of a gas mask, the fear of fire or explosion or the need of special equipment or clothing.

The next meeting will be held October 11 at Niles.

William Schmidt, whose nursery has been closed since shortly after Pearl Harbor and who has been working in defense plants, will reopen his nursery about October 1. During the war all supplies and any less desirable stock were disposed of either by sale or by fire, so the reopened nursery will have all new stock in good condition. W. B. B.

#### TRI-COUNTY MEETING.

The Tri-County chapter of the California Association of Nurserymen met at Santa Barbara, August 17. The speaker of the evening was Mark Havens, of the agricultural commissioner's office, who gave an interesting talk on the new hormone weed-killers and precautions in using them. Walter J. Knecht, Sec'y.

#### APEX ADDS EQUIPMENT.

Stanford L. Hermann, operating vice-president of the Apex Chemical Co., Elizabeth, N. J., and New York city, has announced the purchase of all installations, equipment and laboratories of the K & S Chemical Co., formerly of 44 Cliff street, New York city, a manufacturer of fine chemicals, drugs and pharmaceuticals. This equipment has now been installed at Elizabeth, and the manufacture of these organic synthetics on a commercial basis is now under way.

Sidney M. Weinstein, director of research, and Dr. Philip Levine, head of the organic division, have been assigned to the development and production of these various organicals.

## PORTLAND WHOLESALE NURSERY CO.

306 S. E. 12th AVENUE Avery H. Steinmetz PORTLAND, OREGON

### Quality Stock

CONIFERS AND BROAD-LEAVED  
EVERGREENS  
SHADE AND FLOWERING TREES  
FRUIT TREE SEEDLINGS  
FRUIT TREES  
DECIDUOUS SHRUBS  
VINES AND BULBS  
PORTLAND ROSES

Good supply 4-yr.-old, well branched  
**NORWAY MAPLE.**  
10 to 12 ft., 1 1/4 to 1 1/2-in. cal. .... \$1.50  
8 to 10 ft., 1 to 1 1/4-in. cal. .... 1.25  
Thousand rate 10 per cent less.  
Combination carloads to Eastern  
points in early Spring.

*Write for our Catalog*

### A. MCGILL & SON

FAIRVIEW, OREGON

*Wholesale Only*

#### GOOD WESTERN-GROWN NURSERY STOCK

Fruit Tree Seedlings  
Flowering Ornamental Trees  
Shade Trees

Grown right and packed right.  
Combination carloads to Eastern  
distributing points will save you  
on freight.

### MILTON NURSERY CO.

A. Miller & Sons, Incorporators

MILTON—Since 1878—OREGON

*Growers of a  
General Line  
of  
Nursery Stocks*

Combination carloads to eastern  
distributing points at minimum  
freight cost.

### AS ALWAYS— OREGON'S BEST SOURCE of GOOD ROSES

Our limited crop is reserved for  
our regular customers this year.

### PETERSON & DERING

Wholesale Rose Growers  
Scappoose, Oregon

### OREGON-GROWN NURSERY STOCK

We have a complete line of shade and  
flowering trees, both whips and heavier  
branched stock.

Flowering Cherries, Flowering  
Crabs, Plums and Locusts,  
Norway and Wiers Maples,  
Oaks—Chinese Elm—Mountain  
Ash—Birch—Hawthorns.

### DOTY & DOERNER, INC.

6691 S. W. Capitol Highway  
PORTLAND 1, OREGON

### NOTICE

Decreased production makes it impos-  
sible to book orders for new customers.  
For the duration the limited supply is  
reserved for our regular trade.

HOWARD ROSE CO.  
Hemet, California

### BALED SHINGLE TOW

(CEDAR SHAVINGS)

WM. A. JOHNSTON

405 Postal Bldg., Portland 4, Ore.

### PACIFIC COAST NURSERY

Specializing in fruit tree seed-  
lings since 1914. We also have  
Norway and Schwedler Maple,  
Chinese Elm, European White Birch,  
Cut-leaf Weeping Birch, Paul's  
Scarlet Hawthorn and Kwanzan  
Flowering Cherry. All 2-yr.-old  
stock.

John Holmason, Prop.  
2244 N. Skidmore Ct.  
Portland 11, Oregon



## CLASSIFIED ADS

Five lines, \$1.00,  
each additional line 20 cents,  
per insertion.

### BERRY PLANTS

**STRAWBERRY PLANTS**, certified by state department of agriculture. Grown on new land. We are now booking orders for spring delivery as follows: Blakemore, \$5.50 per 1000; Ambrosia, Tenn. Supreme, Premier, Dunlap, \$3.50 per 1000; Gem Mastodon, Progressive Everbearing, \$10.00 per 1000; Minn. 1166 (named Evermore), \$15.00 per 1000. 20 per cent deposit assures you plants at the proper time next spring.

ROMINES PLANT FARM, Dayton, Tenn.

### GEM EVERBEARING STRAWBERRY PLANTS.

We are a reliable source of supply for everbearing Strawberry plants. Now booking orders for future delivery. Special prices on large quantities.

We can also furnish large quantities of Rhubarb and Asparagus plants in all sizes. C. D. WRIGHT, Hamburg, Iowa.

**POT-GROWN STRAWBERRY PLANTS.** Varieties: Blakemore, Dorsett, Fairmore, Howard No. 17, Maytime, Midland, Pathfinder, Premier, Fairfax, Sen. Dunlap, Sparkle, Starbright, Catskill, Chesapeake, Big Joe, Gandy, Lupton, Red Star, \$5.00 per 100. Everbearers: Gem, Gemzeta, Mastodon, Twentieth Century, \$12.00 to \$18.00 per 1000. WARREN SHINN, Root Specialist, Woodbury, N. J.

**BLUEBERRY PLANTS** for fall. Varieties: Rancocas, Burlington, June, Jersey, Cabot, Pioneer, Concord, Dixi, Sam, Stanley, 1 yr. old, \$24.00 per 100. These varieties, 2 yrs. old: Burlington, Cabot, Concord, Stanley, \$45.00 per 100. 3 yrs. old, \$1.00 each. WARREN SHINN, Root Specialist, Woodbury, N. J.

### BERRY PLANTS, ROSES and FRUIT TREES.

Write for advance price list. Only few to offer. Early orders given preference, as we fill orders as received.

FRIOU FLORAL & NURSERY  
Cleburne, Texas

### BULBS

**DAFFODILS**, Tenby Obvallaria, early yellow, \$25.00 per 1000; 6 hardy varieties, mixed, first size, \$25.00 per 1000; smaller blooming size, \$15.00 per 1000. Jonquils, smaller blooming size, \$20.00 per 1000. F.O.B. MRS. R. GABLE, Haralson, Ga.

### EVERGREENS

**JUNIPERUS SCOPULORUM**, B&B for fall delivery 1945 and spring 1946.

Size	5 to 30	30 to 300	300 up
15 to 18 ins.	\$15.00	\$125.00	\$1000.00
18 to 24 ins.	17.50	150.00	1250.00
2 to 2 1/2 ft.	22.50	200.00	1750.00
2 1/2 to 3 ft.	27.50	250.00	2250.00
3 to 3 1/2 ft.	32.50	300.00	2750.00

15 to 18 ins. \$15.00 \$125.00 \$1000.00  
18 to 24 ins. 17.50 150.00 1250.00

**JUNIPERS, SELECTED TYPES**—Spring 1946

Ow-n-root, grown from cuttings, 2 to 4 ins., from pots, 5 to 30 at 30c; 30 to 300 at 25c; 300 to 1000 at 28c; 1000 up at 25c each.

Scopulorum Mottetii, silvery green, best retail tree of all.

Scopulorum Pathfinder, silvery blue.

Scopulorum Sutherland, green compact.

Virginia DeForest, green, bright green.

Virginia Keteleeri, medium green.

Virginia Nevins, blue, silvery blue.

**JUNIPERS, SPREADING TYPES**

5 to 30, 15c ea.; 30 to 300, 17c; 300 to 1000, 15c; 1000 up, 15c ea.

Pfitzer, Golden Pfitzer, Sabina, Sabina Tamaricifolia, Sabina Compacta, Sabina Vonehron, Vir. Kosteri, Creeper Admirabilis.

Orders accepted subject to crop conditions and stock being unsold. 2 per cent discount cash with order; 1 per cent, 10 days; 30 days, net.

DAVIDSON NURSERY CO., Hastings, Neb.

### SEEDLINGS.

Species	Age	Size	Per 1000
Banks Pine	2-yr.	4 to 6 ins.	\$12.50
Banks Pine	3-yr.	6 to 15 ins.	15.00
Pitch Pine	2-yr.	4 to 8 ins.	12.50
Pitch Pine	3-yr.	6 to 14 ins.	15.00
Pitch Pine	5-yr.	15 to 30 ins.	17.50
White Pine	3-yr.	3 to 5 ins.	17.50

SAMUEL E. DIBLE  
C.B.C. Nursery Agent Shelocta, Pa.

### EVERGREEN LINERS

for fall 1945, spring 1946.

Write for list.

SUNCREST EVERGREEN NURSERIES  
Johnstown, Pa.

### CHRISTMAS TREES

Scotch Pine, nice grade, our own stock. Located 50 miles east of Pittsburgh. We recommend early ordering. SUNCREST EVERGREEN NURSERIES, Johnstown, Pa.

### BLUE SPRUCE—NORWAY SPRUCE

For Christmas trees. Well shaped and for delivery after December 1. Write for size and prices.

CALL'S NURSERIES, Box 117, Perry, O.

### BOXWOOD

1000 Boxwood sempervirens, sheared and stocky, 1 to 3 ft. in diameter. Price on request. CONESTOGA GARDENS.  
Ira H. Landis, Lancaster, Pa.

450 TAXUS MEDIA ANDERSONI, 24 to 30 ins., three times transplanted, B&B, \$350.00 per 100. Truck only. 20 per cent cash with order, balance on delivery shipment. F.O.B. NORTH RIDGE NURSERY, Elyria, O.

### BLUE SPRUCE—NORWAY SPRUCE

Cut for Christmas trees, 4 to 5 ft., 5 to 6 ft., 6 to 8 ft. Write for special prices.

CALL'S NURSERIES, Box 117, Perry, O.

### FRUIT TREES

#### FIGS

Texas Everbearing  
Well branched, heavy rooted, absolutely free of disease.

	Each	Each
	per 100	per 1000
15 to 18 ins.	\$0.15	\$0.12
18 to 24 ins.	.20	.15
2 to 3 ft.	.25	.20
3 to 4 ft.	.35	.30

20 per cent deposit with order assures you top-quality figs this fall. Balance cash before shipment, or C.O.D. No packing charges on orders booked for future shipment. F.O.B. H. E. CANNON NURSERY & FLORAL CO.  
Arlington, Texas

**APPLE TREES**

Jonathan, Golden Delicious, Red Delicious, Wealthy, Yellow Transparent, Improved Jennet. SCHULZE NURSERY  
Caseyville, Ill.

### GRASS SODS

GRASS SODS delivered anywhere.

LAUREL NURSERY  
188-19 Merrick Rd.  
Springfield Gardens, L. I., N. Y.

### HARDY PLANTS

#### CLOSE-OUT

**HEMEROCALLIS**  
Duo Bloom, Dumortieri, Sovereign, Modesty, Muller, Mrs. W. H. Wyman, Gypsy, Harvest Moon, Calypso, Bagdad, Winsome, Gracilis.

\$15.00 per 100.  
Fulva, Gold Duet, Minor, \$7.50 per 100.

**AUTUMN-FLOWERING IRIS.**

Autumn Elf, Autumn Haze, Black Magic, Eleanor Roosevelt, Sangreal.

\$15.00 per 100.

**BEARDESS IRIS.**

Pseudacorus, Pseudacorus immaculata, Pseudacorus gigantea.

\$15.00 per 100.

**SIBERIAN IRIS.**

Excellent for cut flowers.

Bob White, Caesar, Butterfly, Dragonfly, Emperor, Geo. Wallace, Llewellyn, Mrs. Gray Hill, Nora Distin, Papillon, Peggy Perry, Perry's Blue, Pygmy, Coreana, Periwinkle, Red Emperor, Summer Sky, Skyrocket, Skylark, Snow Queen, True Blue, Lady Northcliffe, Kingfisher Blue.

\$10.00 per 100, \$75.00 per 1000.

EMIL A. WITTMAN,  
1434 Van Houten Ave. Clifton, N. J.

### THE DELPHINIUM OF TOMORROW

**LYONDEL GIANT HYBRIDS**

Massive spikes, stately, majestic, colorful. A new strain especially selected for its large-size flowers and wide range of beautiful colors. Doubles, semidoubles, singles. Extremely hardy.

Field-grown plants for fall shipment.

\$4.00 per dozen, \$25.00 per 100

CORLISS BROS., INC. NURSERIES

Gloucester, Mass.

### SURPLUS PEONIES, 3 to 5 eyes.

Queen Victoria, white, \$18c

Festiva Maxima, white, \$30c

Edule Superba, early, deep pink, \$20c

Reine Hortense (purchased as such, but shade a trifle deeper), \$25c

Box 113 A Homewood, Ill.

**VINCA MINOR**

Bowles variety, 6 to 12 ins. Many runners. Excellent growth. \$10.00 per 100.

SYLVANIA NURSERY & PEAT CO.  
New Galilee, Pa.

### PEONIES

3 to 5-eye divisions	Per 100	Per 1000
Edule Superba, pink	\$27.00	\$250.00
Festiva Crouse, red	35.00	300.00
Festiva Maxima, white	27.00	250.00
Floral Treasure, pink	27.00	250.00
Fragnans, red	27.00	250.00
Lady Leonora Bramwell, pink	27.00	250.00
Mme. de Verneville, white	27.00	250.00
Mons. Jules Elie, pink	45.00	400.00
President Taft, pink	45.00	400.00
Queen Victoria, white	27.00	250.00
Sarah Bernhardt, pink	45.00	400.00

PHIL LUTZ PEONY FARMS, Boonville, Ind.

### Hardy, field-grown, 1-yr. plants.

	100	1000
Gallardia Burgundy, Goblin	\$2.50	\$21.00
Aquilegia Dobbie's Imp. Hybrids	2.50	21.00
Delphinium, Belladonna	2.50	21.00
Belladonna, Gold Medal	2.50	21.00
Delph. Giant Pac. Hybrids, mixed	3.50	32.00
Shasta Daisy, Mrs. C. L. Bell	2.50	21.00
Conqueror	2.50	21.00
Oriental Poppy	2.50	21.00
Lythrum roseum	2.50	21.00

NOVOTNY GARDENS, Osage, Iowa.

**PEONY OFFICINALIS**, red only.

3 to 5-eye divisions from young plants. \$30.00 per 100, F.O.B.

STOCKWELL NURSERY  
Kallispell, Mont.

### ROOTS

**MARY WASHINGTON ASPARAGUS ROOTS.**

September, October, November or April delivery. Large, strong, healthy, northern-grown and state inspected. Dug on day shipped and packed in moist peat. Order now. Supply limited. Two-season-old plants, 250, \$5.00; 500, \$9.00; 1000, \$16.00, F.O.B. here. (Also some one-season-old plants at \$12.00 per 1000.)

ARTHUR E. GUSTAFSON, Pine City, Minn.

**MARY WASHINGTON ASPARAGUS**

ROOTS for fall. Rhubarb roots, Horse-radish roots. Willow roots for winter forcing. Chives for greenhouse forcing. Herbs, Raspberries, Boysenberries, Blackberries, Dewberries, Blueberries, pot-grown Strawberry plants. WARREN SHINN, Root Specialist, Woodbury, N. J.

**PERENNIAL MULTIPLIER ONIONS**

Top sets.

10 lbs., \$2.00; 100 lbs., \$15.00.

THE EVERGREEN NURSERIES

Lowell, Indiana.

### SHRUBS and TREES

#### LONGICERA HALLIANA

Lining-out, \$15.00 per 1000

2-yr. 60.00 per 1000

### WANTED

Chinese Elm, lining-out, 5 to 6 ft.

Chinese Elm, lining-out, 2 to 3 ft.

Bolleana Poplar, lining-out, 2 to 3 ft.

Norway Maple, 2 to 3 ft.

Red Barberry, lining-out, 6 to 12 ft.

Humboldt Rose, lining-out.

BURKMAN'S NURSERY Roscoe, Ill.

We are now booking orders for Apple and Pear grafts for shipment spring 1946. Also will have 50,000 Apple and Pear scions to offer. 500 Globe Arborvitae, 18 to 24 ins. and 24 to 36 ins.; 1000 grafted Junipers, 4 to 5 ft. and 5 to 6 ft. in Hill's Dundee, Virginiana Glauca, Virginiana Cananeri; 1000 Chinese Elm; 1000 American Ash; 500 Red Oak, 8 to 10 ft. and 10 to 12 ft.

EGYPTIAN NURSERY CO., Farina, Ill.

For Fall 1945 we will have a nice assortment of ORNAMENTAL TREES, SHRUBS and EVERGREENS, both liners and whip-grade stock. List now being compiled.

THOMAS B. MEEHAN CO.  
Dresher, Pa.

Container-grown CAMELLIAS of Merit

Write for List of the Best from the Far West.

J. S. TORMEY

Tormey's Gardens, Temple City, Cal.

400 Oriental Planes, 3 to 5 ins.

100 Specimen American Holly, 6 to 10 ft.

200 Specimen Chamaecyparis pisifera aurea, 8 to 9 ft.

STEELE'S NURSERIES, Palmyra, N. J.

**HONEY LOCUSTS**, thornless or thorny, several hundred, choice, well pruned, 1 to 3 ins. in diameter. Attractive prices.

BRUCE NURSERIES  
Alamared, Tex.

3000 White Birch, 4 to 5 ft. \$20 each.

200 White Birch, 8 to 10 ft. \$100 each.

PRESCOTT'S NURSERIES, Marengo, Ill.

### MISCELLANEOUS

1945 Crop PEACH PITS, Southern Collected. High germination. Small seeds, \$3.50 per bu.; medium, \$2.50 per bu.; large, \$2.00 per bu.

Peach, Plum, Apricot, 1-ft., 20c; 2-ft., 30c; 3-ft., 40c; 4 ft., 60c; 6-ft., 70c; 8-ft., 80c.

Seedling Peach trees, \$25.00 per 1000. Cash with order.

RIVERDALE NURSERIES Riverdale, Ga.

	Per 1000
Latham and St. Regis Raspberries, No. 1	\$50.00
Green Ash, 4 to 5 ft.	50.00
Laurel Willow, 2 to 3 ft.	30.00
Golden Willow, 3 to 4 ft.	35.00
Northwest Poplar, 4 to 5 ft.	40.00
Washington Ash, No. 2	20.00
Ponderosa Pine, 8 to 12 ins., x	\$15.00
Black Hills Spruce, 6 to 12 ins., x	15.00
Colorado Spruce, 6 to 12 ins., x	15.00
Common Lilac, 6 to 8 ins., x	4.00
Tartarian Honeysuckle, 12 to 18 ins., x	5.00

TRADWELL NURSERY CO.,  
Great Falls, Mont.

GRAPES, 1-yr., No. 1, at wholesale prices.	Per 100	Per 1000	Per 10,000
Concord	\$10.00	\$90.00	\$800.00
Fredonia	11.00	100.00	900.00
Moore Early	11.00	100.00	900.00
Campbell Early	11.00	100.00	900.00
Delaware	12.00	110.00	1000.00
Niagara	11.00	100.00	900.00
Cynthiana	12.00	110.00	1000.00

CALIFORNIA LOVELL PEACH SEEDS

from 1945 crop. Well cared for in drying.

In bags of about 50 lbs. each, \$3.00 per bushel.

In lots of 10 bushels and up, \$2.50 per bushel. F.O.B. Rogers, Ark.

BENTON COUNTY NURSERY CO., INC.

Rogers, Ark.

PANSIES

Ready now. Steele's Mastodon Jumbo

Mixed. Seed 100 per cent direct from Steele.

Price, \$5.00 per 1000, \$5.00 per 500.

TRAUERNICHT NURSERY CO.

400 No. Sylvania Ave.

Ft. Worth 3, Texas.

#### SUPPLIES

BAMBOO CANE STAKES DYED GREEN—Pencil Thickness	Contents	Price
	Per Bale	Per Bale
*12 ins.	2000	\$ 5.75
*15 ins.	2000	7.50
*18 ins.	2000	8.50
*21 ins.	2000	11.00
*24 ins.	2000	13.85
*27 ins.	2000	16.65
*30 ins.	2000	19.50
*33 ins.	2000	22.30
*36 ins.	2000	24.60
NATURAL COLOR—Medium Heavy	1000	\$13.50
*36 ins.	1000	17.00
*39 ins.	1000	18.00
*42 ins.	1000	18.00
*45 ins.	500	11.50
*48 ins.	500	5.00
NATURAL COLOR—Extra Heavy	1000	\$13.00
*36 ins.	200	12.50
*39 ins.	150	11.00
*42 ins.	100	8.50

F.O.B. New York and Chicago. Bale lots only.

\*These sizes available for prompt shipment from New York.

\*These sizes available for prompt shipment from Chicago.

\*These sizes available for prompt shipment from both New York and Chicago.

Quantity discounts: 10 bales up, less 5 per cent. 25 bales up, less 7 1/2 per cent.

McHUTCHISON & CO.

95 Chambers St. New York 7, N. Y.

#### WOOD PLANT BANDS.

Used by the largest growers of Carnations, Snaps, Stocks, perennial plants and all plants to be transplanted in the greenhouse or outdoors. Get your supply now, also, for Vegetable plants for resale.

No.	Size in ins.	Weight	Per 1000	Per 1000
No. M-370	1 1/4 x 1 1/4 x 2 1/4	12 lbs.	2.95	
No. M-320	2 x 2 x 2 1/4	16 lbs.	3.30	
No. M-340	2 1/4 x 2 1/4 x 3	20 lbs.	3.75	
No. M-350	3 x 3 x 3	21 lbs.	4.10	
No. M-360	3 1/4 x 3 1/4 x 3 1/4	32 lbs.	4.75	
No. M-391	4 x 4 x 4	40 lbs.	5.60	

Packed 1000 to the carton.

We do not break the carton.

#### LIGHT WOOD FLATS.

Suitable only for holding and shipping our Wood Plant Bands. Bands are not included at prices below.

	Per 100 flats
M-370, holds 12 1 1/4-in. bands	\$2.75
M-390, holds 12 2-in. bands	3.30
M-392, holds 12 2 1/4-in. bands	3.75
M-393, holds 6 3-in. bands	3.25
M-394, holds 6 4-in. bands	3.95

Packed 100 to the carton. We do not break cartons.

#### AMERICAN BULB CO.

1335 W. Randolph St., Chicago 7, Ill.

31-37 W. 27th St., New York 1, N. Y.

#### PROFIT WITH PERF-O-RAIN.

Rain when you want it—low pressure—rectangular strip watered—No overlap—No sprinkler heads or other gadgets—Portable lightweight pipe—Long life. Write for free folder. W. R. AMES COMPANY OF FLORIDA, 4005 E. Broadway, Tampa 5, Florida, or W. R. AMES COMPANY, 150 Hooper St., San Francisco 7, Calif.

COTTONETTE Squares are best for balling.

Saves time and twine. All sizes in stock.

Write NEW AMSTERDAM IMPORT.

122 Chambers St., New York 7, N. Y.

#### KNOCK-DOWN FLATS.

#### CYPRESS HAS GONE TO WAR.

It is frozen under priority for Navy work. For the duration, we will ship Flats manufactured from a good grade of Yellow Pine lumber AND NOT CYPRESS. Standard specifications, inside measurements. 16x12x2 1/2 ..... \$11.25 per 100 16x14x3 ..... 14.25 per 100 20x14x2 1/2 ..... 14.00 per 100 20x14x3 ..... 16.25 per 100 22x15x2 1/2 ..... 15.75 per 100 22x15x3 ..... 18.00 per 100 All other sizes quoted on request. Prices f.o.b. Birmingham.

We are manufacturers, not jobbers. Freight to any point is a small item per Flat. Our Flats are the best. Why pay more? Our quality guaranteed. Prompt shipment, any quantity. Attach check to order.

#### HIGHTOWER BOX & TANK CO.

Birmingham, Ala.

#### MEL-LO PEAT

A pure Sedge Peat, weedless, odorless, no inert matter. Contains 2 to 2 1/2 per cent nitrogen, 96 per cent humus; acidity, 5.3 to 5.8. Excellent for seedlings, hardwood and softwood cuttings, transplanting evergreens and shrubs and ideal for top-dressing lawns.

1 to 10 2-bu. bags, f.o.b. .... \$1.25 11 to 51 2-bu. bags, f.o.b. .... 1.10 51 to 100 2-bu. bags, f.o.b. .... 1.00 101 to 200 2-bu. bags, f.o.b. .... .90

Mel-lo Peat is milled and fluffed by a special process, ready to use. Adopted by the universities, agricultural colleges, nurseries and landscape gardeners. Accept no substitutes; demand Mel-lo Peat. Our guarantee, check with order, prompt shipment. Wire, phone or write.

#### MEL-LO PEAT CO.

Elyria, Ohio

RUBBER. Your Rubber requirements are important. Know where to get it when you want it. Belts, rubber bands, boots, coats, gloves, hose, spray bulbs, aprons, budding strips. Get our price sheet and catalog today.

#### BROADWAY RUBBER MFG. CO.

Louisville 2, Ky.

#### PRINTING

Letterheads, billheads, statements, cards, envelopes, tags, blotters, folders, catalogs, samples.

#### J. GARLAND HILL

Dept. A, Seaford, Del.

#### WINDOW BOXES—Galvanized Iron.

27 ins., 6 1/4 deep x 4 1/4 ins. .... 40c

Painted green ..... 65c

They make good nut and bolt boxes.

Samples, including postage, 60c

MARYLAND NURSERY, Edmonston, Md.

GIBRALTAR Frost Covers pay for themselves. Economical, long-lasting, ideal for windbreaks. 6 ft. wide; 60 ft., \$13.75; 100 ft., \$26.00; 150 ft., \$39.00. NEW AMSTERDAM IMPORT, 122 Chambers St., New York 7, N. Y.

#### FLATS.

16x8 1/4 x 4 1/4 ins. .... 20c

Samples, including postage, 35c

MARYLAND NURSERY, Edmonston, Md.

#### Surplus Stock

can be easily and quickly turned into

#### Cash

listing it in the

American Nurseryman Classified Ads.

#### WANTED

WANTED TO TRADE OR SELL.

We have a surplus for spring in the following: Currants, 2-yr., in leading varieties; Apple seedlings, all grades; Jap Barberry, 18 to 24 ins. and 2 to 3 ft.; Pink Tartarian Honeysuckle, 2 to 3 ft. and up.

We need for early spring: Gooseberry liners; White Birch seedlings, 3/4 to 1 1/4 in.; American Linden, 18 to 24 ins.; Prunus Tri-loba, 2 to 3 ft.; Pink-flowering Almond, 2 to 3 ft.; Cotoneaster Acutifolia seedlings, 2 to 3 ft., and Rosa Multiflora seedlings, No. 1.

#### STATE NURSERY & SEED CO.,

Helena, Mont.

#### WANTED.

Caragana hedging.

Common Snowball, 12 to 18 and 18 to 24 ins.

Flowering Plum, 12 to 18 and 18 to 24 ins.

TREADWELL NURSERY CO.,

Great Falls, Mont.

#### WANTED

For late fall or early spring delivery, all varieties Grapes, Raspberries, Boysenberry, Asparagus and Strawberry plants.

E. W. TOWNSEND & SON, Salisbury, Md.

#### WANTED

Seedling American Persimmon Trees.

Seedling Chinese Chestnut Trees.

#### SUNNY RIDGE NURSERY

Swarthmore, Pa.

#### WANTED

Thousands of Evergreen Liners.

Please quote on what you have at once.

WHERRY'S NURSERIES, St. Mary's, W. Va.

#### WANTED

Philadelphus Aureus, 12 to 15 ins. or 15 to 18 ins. GEO. E. YOUNG NURSERY, R. 2,

Box 60, Royal Oak, Mich.

#### NURSERY SALES GROUNDS. CONTEST DRAWS 45 PLANS.

The \$500 competition for the design of a nursery sales and display grounds closed August 31. The competition was open to anyone interested in submitting plans for the contest. Plans were received postmarked from almost every section of the country. There were several plans from California, where nursery sales grounds have been tried out for a good many years. At least one was from Florida, and a goodly number were from the east, as well as several from the midwest. With forty-five plans turned in on the contest, and with many of the resulting plans so well executed, it has made the contest highly successful, in the mind of the adviser.

The contest was conceived by Donald P. Wyman, president of the National Landscape Nurserymen's Association, which sponsored the contest and set up the first prize of \$250. The second prize of \$100 is to be given by the W. A. Natorp Co., Cincinnati, and the third prize of \$50 is to be given by the American Nurseryman. In addition, the American Association of Nurserymen is to give four prizes of \$25 each for plans judged worthy of mention.

All contestants were supplied with a set of rules that indicated the size of the plot of land to be used—200x400 feet, along a well traveled highway. Three sets of answers to questions were sent to each of the seventy-two persons submitting entry blanks.

All designers' names are to remain anonymous until the judging has been completed. Each plan is therefore given only a number for reference to the judges. Envelopes containing the names of the contestants will be opened after all judging is completed. The judges for the contest are George C. Roeding, Jr., Niles, Cal.; L. L. Kumlien, Dundee, Ill., and Harold G. Seyler, Weiser Park, Pa.

Because of travel difficulties it was thought the judging might have to be done by sending the plans to each judge and letting him select his choices. This would take considerable time. It would seem this all might not be accomplished until about the first of the year. So, with the prospect of the judges' being able to get together at the proposed A. A. N. meeting at Chicago, in connection with the Illinois State Nurserymen's Association meeting in January, plans are now being made to try to have the judging done then. If this is possible, the plans will be on exhibition

at that meeting, for the first time. At any event, contestants can look forward to learning of results of the contest by that time.

Judging will be based on the following general points set up in the contest: (1) Efficiency of operation, (2) originality in solution of problem, (3) general appropriateness and attractiveness, (4) practicability and economy.

There have been some most attractive, as well as practical, solutions to the problem: Many plans show an enormous amount of study. Each plan has something to contribute in the way of suggestion for displays and convenience of operation. Many suggestions are offered in the way of building set-ups that are definitely an improvement over the average establishment of this type in use today.

Among other things that impressed the adviser was the many different types of techniques used in presenting ideas in the contest. Though there was no emphasis made in the rules about the technique of the drawings, these plans represent just about everything in attractive plan presentation. If for nothing more, it would be well worth a trip to see these plans, when on exhibition, just to study various methods used in drawing landscape plans.

Typical of several letters received with plans is the remarks of one of the contestants, "Regardless of how I come out in the competition, I feel it well worth the hours I spent on the design. You will no doubt publish the winning designs, and this will help the rest of us who may not have winning designs to see our weakness and will give us additional material to help us plan our own display grounds."

For those planning to develop a nursery display and sales grounds, copies of these plans would be most valuable to have in their possession. The Landscape Association is making arrangements to have photo copies of the plans made, in full size, to be distributed at about cost to its members and to others who might be interested. Details of this service will be announced later.

Harold E. Hunziker,  
Contest Adviser.

### PLANT ROOTS COMPETE.

The effect of competition between plants is most apparent when moisture is scanty. Slow-growing perennial plants until established require protection from root competition by quick-growing annual plants. This is especially the case in the Great Plains area, where experiments in planting

## WANT ADS

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### SITUATION WANTED

Now at liberty to accept position of responsibility after four years of accounting on defense construction.

Age 47, married, in good health. Three years of college, including studies in business administration. A good executive, with twenty-three years of practical experience in every branch of the business from growing to office, mail order from advertising to shipping and organizing, landscaping from selling, plan making to planting. Can take over, reorganize and put your business on efficient and profitable basis. Know stock and markets. I am well known to the trade throughout the United States.

Write or wire. Confidential.

Address Box No. 372, care of American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

### FOR SALE

Nursery established in 1876.

On two highways.

25 towns and cities within 30 miles.

Good location for cash and carry.

PRESBOTT'S NURSERIES, Marengo, Ill.

**HELP WANTED.** Experienced mail-order clerk to become manager of mail-order department. Fast-growing nursery business in prosperous trade territory. Radio specials.

OZARKS PLANT FARMS, Inc.

Springfield, Mo.

**HELP WANTED.** Young man with landscape experience and sales ability in mid-western city of 75,000 and larger trade territory. Fine opportunity to become important executive with this fast-growing organization.

OZARKS PLANT FARMS, Inc.

Springfield, Mo.

**HELP WANTED.** Opportunity for young man with nursery experience to become partner in fast-growing business. Live mid-western city of 75,000. Large trade territory; very little competition. Buy out several inactive small stockholders. Fine opportunity for right party. References.

Address Box No. 373, care American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

trees and shrubs for windbreaks show that a year or two of cultivation to keep down weeds is a great aid to young trees in surviving drought difficulties.

How keen is the competition among roots for a limited supply of moisture is reported by the United States Department of Agriculture from its experiment station at Big Spring, Tex. Chinese elm trees planted along a highway created a cropland zone extending more than sixty feet into an adjoining field. The trees are about a rod apart. The adjoining field has been kept planted to row crops, usually sorghums. Plantings have extended right up to the tree zone, but ever since the trees were well established, even the drought-resistant sorghums have failed to grow in the area into which the tree roots have extended themselves.

The zone bare of crops means about two acres lost to crops along the 80-rod row of trees. If there were trees on all sides of a 40-acre field (80x80 rods), the investigators figure the loss to effective cropping would be nearly eight acres, or almost a fifth of the field.

## HELP WANTED

### NURSERY SUPERINTENDENT

A fine opening, with good salary, for a young man conversant with plant materials, propagation and production. Must be able to handle men, oversee the packing and shipping of our products and give general supervision to outside activities of an up-to-date landscape nursery located in Michigan, near Detroit.

Please give complete outline of experience, training and previous employment.

Address Box No. 371, care of American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

## HELP WANTED

### By Nursery in South

Salesman for retail nursery who can make planting suggestions and draw plans for small properties. Permanent year-around work and an opportunity for interest in business.

Field foreman for nursery. Must know plants and be able to handle men. Permanent year-around work. Give age, experience and salary expected.

Address Box 374, care of American Nurseryman, Chicago.

## HELP WANTED

Experienced man to take charge of propagation of evergreens, shrubs, etc. Good opportunity for right man. House available. References required.

BULK'S NURSERIES, Babylon, L.I., N.Y.

## HELP WANTED

Permanent position for a man with some propagation experience, by budding, grafting, growing from seeds, etc. Will furnish house with garden spot, chicken house and cow pasture. Returned serviceman preferred.

BENTON COUNTY NURSERY CO., INC.

Rogers, Ark.

## FOR SALE

Small nursery on sea shore. No cold winters or hot summers. Small amount of capital needed.

Write

W. J. MOSS  
Rockport, Texas

## TO SERVICE MEN

Returned service men and women may insert a one-inch situation wanted advertisement in this department without charge. Listing in the placement service of the American Nurseryman will be included.

Instead of remittance, send full address of military unit when mustered out and date of discharge from the service.



## Own a SOIL TEST LABORATORY Of Your Own



**\$22.50**

express paid

### SUDBURY PORTABLE SOIL TEST LABORATORY

The most valuable piece of equipment you can own, giving you the soil information that you need for efficient production. Widely used by estates, professional growers and government field stations. Will last almost a lifetime with refills. Comes in instrument type, solid mahogany case. No chemistry knowledge required. Complete with instructions and helpful chart. **SEND NO MONEY.** Order C.O.D. \$22.50, plus express charges (or send \$22.50 and we pay express). Money back guarantee.

Dealers Write for Special Offer.

**SUDBURY SOIL TEST LABORATORY**  
359 Lab. Bldg. So. Sudbury, Mass.

## GLADIOLUS BULBS

By the 100, the 1000 or million.

Margaret Fulton, Bit O'Heaven, Gardenia, Aladdin, Token, Algonquin, Peggy Lou and Margaret Beaton—our specials.

Price list and shipments by November 1. Remember us. Healthy stock.

### CUTLER & VENNARD NURSERY

Box N-394 or 394-N Sioux City, Ia.

## PEACH PITS

THE  
Howard-  
Hickory  
Company

Hickory, N. C.

## MAZZA RD CHERRY SEEDS

Hardy strain for planting.

75¢ per lb. in exchange for anything we can use.

**VIRGINIA TREE FARM**

Woodlawn, Va.

## North Dakota and Montana Seeds

Northern-grown Tree, Shrub  
and Wild Flower seeds.  
Wholesale crude botanicals.

**E. C. MORAN**

Stanford, Mont.

## PRONOUNCING DICTIONARY of Plant Names

64 pages, 8000 names, 25¢ per copy  
American Nurseryman Chicago

## OBITUARY.

Miss Nell S. Skinner.

Miss Nell S. Skinner, secretary of J. H. Skinner & Co., Topeka, Kan., died September 14. She was 59 years old.

Born at Troy, O., in 1886, Miss Skinner went with her family in 1890 to Topeka, where her father established J. H. Skinner & Co., one of the pioneer nurseries of the middle west. After her school days, she worked as secretary to her father until the time of his death in 1930, when she joined her two brothers, Ralph E. Skinner and George M. Skinner, in carrying on the business. In her position as secretary of the firm, Miss Skinner was known to many throughout the nursery trade.

Besides her two brothers, Miss Skinner is survived by two sisters, Mrs. Elmer E. Olinger, Oklahoma City, Okla., and Mrs. Ralph S. Cecil, Palo Alto, Cal.

## SOUTHWESTERN NEWS.

Charles Robert Minich, 20-year-old son of Ross Minich, Minich Nurseries, Kansas City, was commissioned second lieutenant in the marines at Quantico, Va., August 29. After a 15-day leave at home, he will be stationed at Camp Pendleton, Cal., near Riverside.

Harley J. Deems and C. C. Smith, Sherman Nursery Co., Charles City, Ia., made a business trip to Chicago the middle of September. They report a continued shortage of labor in their area.

## NORTHERN NUT GROWERS.

The annual meeting of the Northern Nut Growers' Association was canceled this year on account of travel restrictions, but the annual report will be published to keep members up to date on recent developments in nut culture.

The 1944 report of the association was mailed to all members in June. Other persons may obtain a copy of the report from the secretary at \$1 per copy. It contains 124 pages of text on various nuts and their culture.

Miss Mildred Jones, P. O. Box 356, Lancaster, Pa., became secretary of the Northern Nut Growers' Association, September 1, succeeding George L. Slate, Geneva, N. Y. The daughter of the late J. F. Jones, the new secretary is an authority on nut culture and her operation of the Jones Nursery has acquainted her with the problems of the producer and purchaser of nut trees.

## New Crop PERENNIAL SEEDS

All seeds that you can sow now.  
All "A.B.C. Supreme Quality."

**AQUILEGIA**, long-spurred,  
Mrs. Scott Elliott.

Tr. Pkt., 40¢; 1/4 oz., \$1.00; oz., \$3.50.

**BELLIS PERENNIS**

**Monstrosa Double Rose**

The popular English Daisy. Tr. Pkt., 50¢;  
1/4 oz., \$3.00; oz., \$9.50.

**DELPHINIUM**  
**GIANT PACIFIC HYBRIDS**

**Black Knight Series.** Darkest of all.  
**Blue Bird Series.** A white bee; medium blue petals.

**Blue Jay.** Medium to dark blue with dark bee.

**Cameliard Series.** Lavender self with white bee.

**Galahad Series.** Finest white, 3-inch flowers; pyramidal spikes.

**Guinevere.** Light pink-lavender with white bee.

**King Arthur.** Royal violet with white bee.

**Round Table Series.** All the colors of the "Knights and their Ladies" series, including many not yet introduced.

**Summer Skies.** Light blue with white bee.

PRICES ON ABOVE

Tr. Pkt., \$1.25; 1/8 oz., \$2.50;

1/4 oz., \$4.00; Oz., \$14.00.

**GIANT PACIFIC HYBRIDS**

Vetterle & Reinelt

**Blue Shades.**

**Clear White.**

**Lavender Shades.** A fine pastel-colored strain.

**Pastel Shades.** Mixture of lavender and blue pastel shades.

**Violet Shades.** Deep, rich, violet-blue colors with many contrasting white bees.

**V. & R. Mixture.** A very fine general hybrid mixture of all V. & R. varieties.

PRICES ON ABOVE

Each Tr. Pkt., \$1.00; 1/8 oz., \$2.00;

1/4 oz., \$3.50; Oz., \$12.00.

**MISCELLANEOUS STRAINS**

**Belladonna Improved (Cliveden Beauty).** A very select strain of strong, vigorous habit. Large flowers of brilliant iridescent turquoise-blue.

**Bellamosum Improved.** A rich, deep blue form of Belladonna.

PRICES ON ABOVE

Tr. Pkt., 40¢; Oz., \$3.00; 1/4 lb., \$10.00;  
lb., \$35.00.

**Heuchera Sanguinea**  
**Hybrids, Mixed**

Rich, bright coral-red. Large bells.

Tr. Pkt., \$1.00; 1/8 oz., \$2.00;

1/4 oz., \$3.50.

**Primula Polyantha**  
**Veris Hybrids**

A.B.C. Private stock. Exceptional quality in color range and size of blooms.

Tr. Pkt., \$1.25; 3 Tr. Pkts., \$3.00.

Mail us your order today.

Immediate delivery!

**AMERICAN BULB CO.**

1335 W. Randolph St., Chicago 7  
31 W. 27th St., New York 1

## "WE'RE DOING OUR BEST"

To restore our stock as rapidly as restrictions are lifted and supplies are obtainable.

Subject to acceptance and availability for OCTOBER, NOVEMBER and DECEMBER SHIPMENT, we offer limited quantities in

E-Z Creped Waterproof Nursery Wrap  
30/30/30 Plain or Flat Waterproof Paper

1/2 x 1/2-in. or 1 x 1-in. Crosscord Waterproof Paper  
30/30/30 Creped or Crinkled Waterproof Paper

18, 24, 36, 48 and 60-in. width rolls. Sheets to order.

Kraft Wrapping Paper, Tissue Paper, Tapes, etc. Twines and Cordage, if available.  
WRITE FOR SAMPLES, PRICES and YOUR ALLOTMENT.

### EAGLE WRAPPING PRODUCTS CO.

Packing and Shipping Supplies for the Nurseryman

312-330 North Carpenter Street

Chicago 7, Ill.

#### ILLINOIS OFFERS COURSE IN LANDSCAPE OPERATION.

A course of study in landscape operation has been announced for the University of Illinois department of landscape architecture. It will train students for landscape planning, contracting and maintenance. The university announcement states: "This field provides an opportunity to serve middle-income families, farm families, town and village park boards, school boards and cemetery boards. The training also will prepare graduates as independent operators to be landscape contractors for professional landscape architects and others doing land-planning which involves construction and planting."

#### FARMINGDALE INSTITUTE.

The State Institute of Agriculture at Farmingdale, L. I., N. Y., announced the opening of the 2-year courses in agriculture and in ornamental horticulture, September 24.

The institute program provides a practical approach to the business of farming, as well as training toward occupations related to crop and animal production. The two farms, at Farmingdale and at Fishkill, total 1,100 acres. The dairy herd of 100 head, 2,500 laying hens and substantial hog, sheep and beef cattle enterprises afford a basis for the farm operations. Apples, potatoes, grain and hay are major crops. Direct and active participation in all farm operations is the basis for student experience.

The regular course of two years is open to high school graduates. Special schedules are offered to veterans, based upon individual experience and needs. Veterans interested in agricultural training are invited to discuss their problems with institute representatives. The institute catalogue and further information may be obtained on request to H. B. Knapp,



FOR ACID SOIL PLANTS

# RELIANCE

*Azalea and Camellia*  
**SPECIAL**

Already famous for use on *Azaleas* and *Camellias*—Fast becoming the leading plant-food for use on *Magnolias*, *Hollies*, *Gardenias*, *Rhododendrons*, *Kalmia*, *Tea Olives*, *Blueberries*, etc.

Cultural Booklet—*Azaleas* and *Camellias*—will be sent upon request.

The **RELIANCE FERTILIZER CO.**  
SAVANNAH, GEORGIA

### KILLS THRIPS and other insects

Safely with **APEX SALP**

**SALP** is widely used and recommended by various societies and agricultural stations for destroying thrips and other chewing insects. You will find it safe, economical and effective for all kinds of ornamental flowers as well as vegetables.

**SALP** is easy to mix because of its liquid form and dissolves without heating; will not injure plants; does not discolor foliage; is **completely effective during hot dry periods**; and is preferred to tartar emetic, Paris green and other insecticides.

Write for complete details to Dept. AN

**APEX CHEMICAL CO., INC.**

225 W. 34th St. New York 1, N. Y.

Factory: Elizabeth, N. J.

#### SANI-SOIL

The perfect mulch and soil conditioner  
**BAMBOO CANES — RAFFIA — BULBS**

McHUTCHISON & CO.  
95 Chambers St. New York 7, N. Y.

director, State Institute of Agriculture, Farmingdale, N. Y.

THE PLANTSMITHS, formerly located at Salinas, Cal., are now located at Palo Alto, Cal.

#### Evergreens

**Barberry**

**Privet**

Write for wholesale price list.

**GARDNER'S NURSERIES**

Rocky Hill, Conn.

**BUILDING CURBS ENDED.**

Wartime restrictions on the construction of commercial buildings and private homes will end October 15, according to announcement of the War Production Board, made September 18. The revocation of order L-41, by which the WPB limited home and business construction during the war to only the most essential projects, is expected to accelerate building, though for a time this may be hindered by inadequate supplies of materials, particularly lumber.

With the announcement of the lifting of the order, a 6-point program was set up to promote construction activity. Under this program, federal agencies will undertake to increase the supply of scarce building materials. Inventory controls will be strengthened to prevent hoarding of materials and to prevent artificially created shortages. The OPA will strengthen price controls on building materials to counteract inflationary pressure, though the Office of Price Administration has not authority to set prices for completed homes. The federal credit agencies, representatives of industry groups and the national housing agency are to help in the expansion of home construction and to prevent inflation of building and real estate costs.

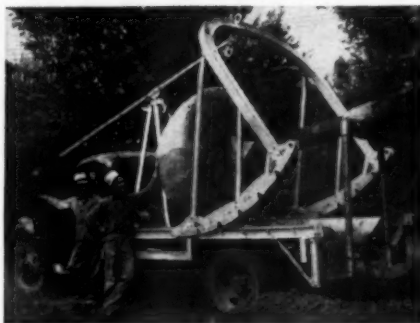
This government action not only permits nurserymen to proceed with the erection of buildings they may have planned for business purposes, but it also accelerates the home-building program which is expected to bring a considerable volume of landscape orders in the period ahead.

**TRAVEL CURBS EASED.**

Reservations for space on railroad passenger trains, including sleeping car accommodations, may now be made fourteen days in advance, according to an announcement of the Office of Defense Transportation last month. Since June 29, the ODT had prohibited railroads from selling or allocating space on any passenger train more than five days in advance of the departure time of the train.

Limitation of attendance at conventions has been lifted entirely. The restriction to fifty persons had been eased to 150 persons in August. Last month the restriction on convention attendance was withdrawn altogether.

HAVING received an honorable discharge from the army last spring, Carl D. Schweizer is starting an evergreen nursery at West Chicago, Ill.

**AUTOMOTIVE TREE MOVERS**

After many years devoted to the development and manufacture of tree movers, Williams & Harvey are again starting to produce the latest model Rocker Type Tree Mover.

These machines have been thoroughly tested, not only in our nursery, but by others during the war period. The simplicity in the operation of this mover, plus demountable features, cuts the cost of moving big trees. Write for particulars.

**WILLIAMS & HARVEY NURSERIES**

Box 7068, Country Club Station,

KANSAS CITY 2, MO.



Pat. No. 110110.

**\$35.00**

F.O.B. K. C. Kansas

**NURSERY HAND TRUCK**

It will help to solve your labor problem.

We are now in a position to make immediate delivery.

**SPECIFICATIONS**

Equipped with Jumbo Balloon Tires and Tubes, 12x4 inches.  
Specially Designed Curved Nose.  
All-steel Construction, electrically welded.  
Weight 56 pounds.  
Over-all Length 63 inches.  
Over-all Width 27 1/2 inches.  
Capacity 28-in. Ball weighing 600 pounds.

**THE GARDEN SHOP, Inc.**

4819 Mission Rd.

Kansas City, Kan.

Write for Bulletins and Lists of supplies for nurserymen and florists

**Schupp FLORIST SUPPLY CO.**

Dept. A

Wilmette, Ill.

**New and Guaranteed Used**

Steel Pipe and Boiler Tubes  
Wood and Steel Tanks  
Buildings, Valves and Fittings.

**JOS. GREENSPON'S SON PIPE CORP.**

National Stock Yards St. Clair Co., Ill.



## COVER ILLUSTRATION.

**Ceanothus Pallidus Roseus.**

Because of certain peculiarities and cultural requirements, the forms of ceanothus are not used in landscape planting of eastern gardens as much as their beauty indicated that they should be. The west coast gardeners have a wealth of variety, but in the east we are confronted with the use of a few species and varieties, and even these, under cultivation, are not too happy.

Ceanothus pallidus roseus is a hybrid of the species ovatus, a hardy species native of the territory from New England to Colorado and Texas, and the species delilianus, a somewhat tender hybrid type. Our trials with the rose pallidus ceanothus at Columbus, O., have not been extensive, but the plants seem to be subject to winter injury during moderately cold winters.

The rose pallidus ceanothus develops as a spreading shrub of about three feet in height. The leaves are about three inches long, are distinctly 3-veined at the base and are borne alternately on the stem. The flowers are rosy pink and are borne in upright panicles well above the leaves. The flowers are produced during midsummer and early fall.

The ceanothus does not seem to be at home under cultivation. It is difficult to transplant and recovers slowly from transplanting. It does not seem to be particular as to soil fertility and is usually found growing natively in rather poor soil. An average garden soil containing some peat moss and being well drained has given fairly good results.

Because of the rosy-pink flowers and the more compact growth of the plant, the rose pallidus ceanothus is often recommended in preference to the other species and varieties. As with most of the other forms of ceanothus, it is not recommended for general planting in landscape developments. It is recommended that it be used mostly for naturalistic plantings in sunny areas or in the margins of wooded areas. L. C. C.

[Photograph from Arnold Arboretum.]

**HOLLAND BULBS ARRIVE.**

The first shipment of Holland tulip bulbs to the United States since 1939 arrived at Hoboken, N. J., on the S.S. Tiba, September 10.

Aboard the ship were 8,000 cases of bulbs, consigned to various importers; the Holland-American Line acted as agent for the vessel. A sec-

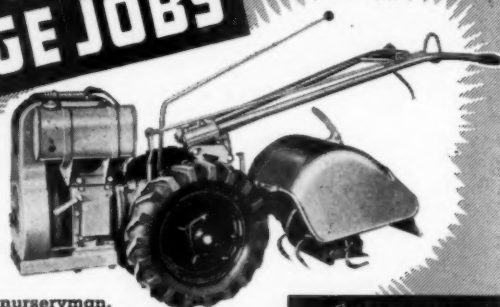
ond shipment arrived at Hoboken a few days later on a Holland-America ship, the Leerdam.

Because of acute transportation shortage from the bulb fields of Haarlem, Hillegom, Lisse and the port of shipment, Rotterdam, as well as a lack of packing materials, the export of bulbs this year will reach only half of the prewar volume, which had a value of more than \$6,000,000.

**APPLESEED AWARD.**

This year the Johnny Appleseed award sponsored by the Men's Garden Clubs of America went to Adolph Jaenicke, for twenty-seven

# DOES ALL TILLAGE JOBS



Increased plant yield with Ariens-Tiller—3 models to meet your requirements.

The perfect all-purpose tilling and cultivating combine for the nurseryman. Ariens-Tiller harrows, as it discs, as it plows. ONE operation produces a properly prepared seed bed, thoroughly aerated with pulverized soil, shredded and evenly mixed. No large soil chunks to retard plant growth. Ariens-Tiller can be operated in wet or dry seasons, and handles easily in small spaces. Complete details and name of distributor on request.

**A COMPLETELY PULVERIZED LEVEL SEED BED IN ONE OPERATION**

## ARIENS Company

BRILLION WISCONSIN



### PROTECT TREES AND SHRUBS AGAINST RABBITS

with COPPER SOAP

rodent repellent

Easily applied, economical, effective. One application lasts entire season. YOUR NURSERYMAN OR SEED DEALER HAS IT. Write for detailed literature.

**CASTLE CHEMICAL CO.**

Castle Rock, Minn.

### LINDIG'S SOIL SHREDDER



Designed by a Florist to meet the needs of Florists, Nurserymen, Landscape Gardeners, Etc. Send for folder and prices

**Lindig's Mfg. Co.**  
Dept. AN

1875 W. Larpentour Ave.  
St. Paul 11, Minnesota

### BURN Weeds NOW • while green



Kill all roots before the winter sets in! Have weed-free ground in the spring ready for healthy planting! AEROIL 99 Weed Burner comes to you GUARANTEED to perform this job!

2000° FLAME

Try this burner for 10 days on our **MONEY-BACK-IF-NOT-ENTIRELY-SATISFIED-OFFER**. 100 other all-season uses including **KILLING GERMS**... a thorough disinfectant. Write for illustrated literature and prices.

### AEROIL PRODUCTS COMPANY

West New York, New Jersey  
Branches: San Francisco, Chicago, Dallas

### CHARLES SIZEMORE Traffic Manager

319½ Georgia St., Louisiana, Mo.

Loss and damage claims against railroad and express companies collected.

Freight bills audited.

Past due notes and accounts collected.

Well known to the nurserymen of the country.

Reference: Bank of Louisiana.

### A. M. LEONARD & SON

Piquette, Ohio

**Tools — Grafting Supplies**

Write for Bulletin.

years superintendent of city parks at Fort Wayne, Ind. This award is made to the person who, in the opinion of the organization's committee, has contributed the most during the year

toward beauty through landscaping and in other ways.

Fort Wayne is the burying place of Johnny Appleseed. The National Appleseed Centennial was held there during the week of September 6, at which time the presentation was made.

#### CATALOGS RECEIVED.

Jackson & Perkins Co., Newark, N. Y.—Wholesale price list of roses, perennials, vines, shrubs, ornamental and shade trees and evergreens, 44 pages and cover, 6x8 inches.

Chandler Landscape & Floral Co., Kansas City, Mo.—Mimeographed wholesale price list of specimen evergreens and deciduous trees and shrubs, 4 pages, 8½x14 inches.

Blackwell Nurseries, Semmes, Ala.—Wholesale price list of camellias, azaleas and broad-leaved evergreens, 4 pages, 5½x8½ inches.

Wayside Gardens Co., Mentor, O.—Wholesale catalog of Dutch bulbs, hardy plants, flowering shrubs, vines and hardy plant and alpine plant seeds, with descriptions and illustrations, 48 pages and cover, 8x10½ inches.

Tingle Nursery Co., Pittsville, Md.—Wholesale price list of small fruit plants, evergreens and shrubs, 36 pages and cover, 4x9 inches.

Shoreway Nursery, Glassboro, N. J.—Wholesale catalog of rock plants and perennials, 24 pages and cover, 4x9 inches.

Inter-State Nurseries, Hamburg, Ia.—Retail catalog of bulbs and perennials, with descriptions and illustrations in color, 16 pages, 7½x10¼ inches.

Earl Ferris Nursery, Hampton, Ia.—Retail catalog of bulbs, flowering trees and shrubs, evergreens and shade trees, with description and illustrations, some in color, 24 pages, 7½x10 inches.

Henry Kohankie & Son, Painesville, O.—Wholesale price list of deciduous and evergreen trees, shrubs and vines, herbaceous plants, fruit trees and small fruits, 216 pages and cover, 4½x7¾ inches.

Fairview Evergreen Nurseries, Fairview, Pa.—Wholesale price list of evergreens, ornamental and shade trees, deciduous shrubs, vines and perennials, 24 pages, 5¾x8¾ inches.

Bosley Nursery, Mentor, O.—Handsomely illustrated retail catalog of roses, hollies, azaleas and rhododendrons, 16 pages, 6¾x10 inches.

N. A. Hallauer, Webster, N. Y.—Wholesale price list of hardy herbaceous plants and bulbs, 6 pages, 4x8 inches.

#### STOCK MUST BE SCARCE!

Newspapers printed the following Associated Press report from Albuquerque, N. M., last month:

When F. M. Griswold walked into his front yard he stared at a long, freshly dug ditch. Thieves, he said, had worked in the night to remove a hedge he had cultivated for seven years.

ABOUT \$90,000,000 worth of farm property, one-fifth of the national fire loss, was destroyed last year by fire, according to the National Safety Council.

Save Time Save Twine Save Labor

## with FELINS ELECTRIC BUNCH TYER

For Bunch Vegetables, Cut Flowers, Nursery Stock



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FOR BEST RESULTS  
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Preserves Wood from Rot.

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1 gal. will cover 400 sq. ft.  
Gal., \$2.90 per gal.  
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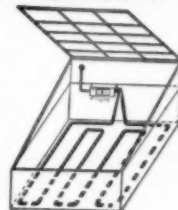
**SOMERSET ROSE NURSERY, INC.**  
P. O. Box 608 New Brunswick, N. J.

E. O. HART, son of C. L. Hart, of the Hart Landscape Nursery, Pocatello, Idaho, has returned to manage the nurseries after having been engaged in war work at San Francisco, Cal., for the duration.

## "GRO-QUICK" ELECTRIC SEED BED HEATER

Be a month ahead of neighboring gardens

Insulated heating cable in hotbed, cold-frame or plant bench. Helps germination, insures fast growth. Will last for years. Money back guarantee. Adjustable thermostat has pilot light. Operates from air temperature.



JUNIOR GRO-QUICK with thermostat and 40-ft. 200-watt cable for 3x6-ft. bed.....\$5.35  
SENIOR GRO-QUICK with thermostat and 80-ft. 400-watt cable for 6x6-ft. bed.....\$6.05  
JR. CABLE only, \$1.00; SR. CABLE only, \$3.20  
Prompt delivery. No priority. Prepaid in U.S.A.

"GRO-QUICK" 366 W. Huron St.  
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## YOU CAN'T BEAT PEAT

for . . . Packing Nursery Stock  
Propagating . . . Mulching  
Soil Conditioning

Write for quotation on quality acid or neutral peats, furnished in triple-walled paper bags or burlap bags.

**ELI COLBY COMPANY, Hanlonton, Iowa**

We specialize on bulk loads .  
to nurserymen.

# In the Country's Service

## CLARK KIDD BAILS OUT.

Among the exciting reports coming from those in service now that censorship is off, recently arrived the details of nearly two days' floating in the Pacific by Sgt. S. Clark Kidd, of the Arp Nursery Co., Tyler, Tex., formerly president of the Texas Association of Nurserymen. Clark is radio operator-mechanic on a B-29 with base in the Mariana islands. He and his crew were on their seventh mission over Japan, this task being a mine-laying objective, when they were forced to parachute. The following letter was received by Mrs. Kidd September 12:

"One engine was suddenly without oil. Engineer reported that the propeller would not 'feather' and the navigator and radar located a target for our mines, which would not be nice luggage in case of trouble. Then navigator got a position for me to send in. No. 1 propeller 'windmills' until whitehot, snaps off and strikes into No. 2 engine, opening wing tanks, and immediately we have a great fire and get the bail out order. There being no proof of enemy action, the deal is marked down as an operational failure, no Purple Hearts.

"Between the navigator's table and the nose wheel hatch and the upper gun turret I have complained of, there is scarcely room enough to squeeze through. With 'chute and harness, 'Mae West' and dingy pack on a guy my size, and the plane in a dizzy spin, something must give—and I wasn't too particular what it was, because Kidd was going out. Hence I find some nicks and cuts and scrapes; so a little of me probably goes down with the plane, which explodes into the big black ocean below me as I am carrying on experiments in adventure and survival. Splash, and I'm tossing about in tangled harness, partly on, sometimes under, the high seas—and lo! The sickening discovery of the loss of my dingy. At this point I reminded the Lord that as a child I attended Sunday school. He must have been listening, because after I returned some gallons of salt water to Neptune, I remembered first principles of hitchhiking. I yell around quite some and finally there is an answer. More yelling and much swimming, later, Schumway (pilot of plane) and I get together riding his one-man raft deep in water, legs dangling.

"Schumway's dingy carried a little water and rations, but we had decided not to touch it for forty-eight

hours. Schumway claims his biggest scare was during the first night, while I dozed in exhaustion from fighting the water and sharks kept nosing in close to see if my large feet were young and tender. Anyway he kept waking me up, popping away with his .45. You know anybody who can't squat like a Texan in conference can't sit on his feet very long at a time, so I kept easing my legs into the water. And the sharks stayed around.

"We never saw the other survivors until a submarine, covered by a B-29, gathered us in after forty-two hours of floating about in the dingy."

The crew parachuted early in the morning of July 27 and were returned to Guam by submarine August 17. Four of the members of the 11-man crew are still missing. Clark sustained scratches infected from salt water immersion, but reports that he was completely recovered in a week because of the excellent care given aboard the submarine. The crew was cited for meritorious achievement, and Clark was promoted to staff sergeant.

## PALMGREN CATCHING UP.

Arrived home September 5 from two months' vacation at our winter home in Florida. Have been discharged and am back at the office after a three years' absence in the army, where I served with the petroleum pipeline engineers.

It might interest you to know that

## AMERICAN NURSERYMAN

I plan to use the back copies of the American Nurseryman to assist me in learning what is new and what has happened the past three years in the landscape and nursery industry. I know of no better nor more reliable and faithful source of information.

Arthur L. Palmgren,  
Glenview, Ill.

WILBUR WIEPRECHT, Portland, Ore., has returned home after serving as a corporal with the 30th infantry division artillery.

W. R. TALIAFERRO, of the Mount Pleasant Gardens, Fort Thomas, Ky., has been honorably discharged from the army and has returned to catch up with the nursery business.

PVT. ARTHUR H. LANGMAN, son of Arthur L. Langman, of the Colorado Garden & Nursery, Colorado Springs, Colo., is stationed at Camp Fannin, Tex., with Headquarters Co., IRTC. When released from the army Private Langman plans to join his father in the business.

BESIDES serving on the executive committee of the New Jersey farm bureau and acting as chairman of the Passaic county war board, Charles Hess, Mountain View, N. J., acts as treasurer and one of the ambulance drivers of a first-aid squad in his community. On one of his daytime trips a baby boy was born, the mother being taken to the Passaic General hospital. Son Hans Hess, when he last wrote, August 22, was on Okinawa.

## NOW TRY PARAGON SPRAYER No. 3 in Your Nursery, Orchard and Propagating Beds.

Ten days' trial will convince you that Paragon Sprayer No. 3 will do your spraying and whitewashing better, faster and easier or it will cost you nothing. Oversize air chamber maintains higher pressure—more uniform spray. Longer pipes and hose reach greater area from one position. Compact truck stands steady on uneven ground; can't jam in narrow places; extra-wide metal wheel rims prevent cutting into turf. Continuous agitation keeps solution from settling in container or clogging strainer and nozzles. Equally effective with any spray, insecticide, disinfectant or water paint anywhere, any time.

Complete with pipes, hose and nozzles, \$25.95. Air gauge \$2.50 extra. 12-gallon capacity. One-wheel truck if specified.

If your dealer does not handle Paragon Sprayer No. 3 check the coupon and mail direct to us.



THE CAMPBELL-HAUSFELD COMPANY, 1003 State Avenue, Harrison, Ohio

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### for Nurserymen

**Book A.** Illustrates in full color 235 standard nursery items, brief description, substantially bound. Price in small lots, 75c each.

### Descriptive Nursery Catalog

Nicely illustrated, 48 pages and cover. 18c each in small lots.

### Correct Planting Methods

A pocket-size 48-page booklet. Very complete but concise information, well illustrated. Helpful in preventing claims for dead stock that cost nurserymen money. Sample, 10c. Write for discounts on quantities.

Will send sample copy of each of the above on receipt of \$1.00. Cash with order.

### Made to Order

Catalogs, Folders, etc., with illustrations in full color or one color. Thousands of engravings available. Send your specifications or samples for estimate and suggestions.

**A. B. MORSE COMPANY**  
ST. JOSEPH, MICHIGAN

## WOOD LABELS

### For Nurserymen

**DAYTON  
FRUIT TREE LABEL  
CO.**

Ray and Kiser Sts. DAYTON, O.

## LABELS FOR NURSERYMEN

**THE  
BENJAMIN CHASE  
COMPANY**  
DERRY, N. H.

"COTTONETTE" Nursery Squares  
"GIBRALTAR" Frost Covers  
LIVE SPHAGNUM MOSS  
RAFFIA for budding, etc.

Write for prices; state requirements.

**NEW AMSTERDAM IMPORT CO.**  
122 Chambers St. New York 7, N. Y.

## VITAMINS GROW WILD.

Various state agricultural experiment stations have done valuable wartime work in testing local wild plants with a view to their use when other sources of important vitamins are lacking. Examples are cited in the 1944 report on the agricultural experiment stations.

The North Dakota station tested buffalo berry, a native fruit and one of the most popular of the fruit-bearing shrubs recommended for erosion control. The buffalo berry proved exceptionally rich in ascorbic acid (vitamin C), even richer than the citrus fruits, which are among the best fruit sources of this vitamin. Ripe buffalo berries furnished more than 150 milligrams of ascorbic acid to 100 grams of fruit. This means that a generous serving of the berries would furnish about twice the standard daily allowance of vitamin C recommended by the National Research Council. Samples of jam made from the ripe buffalo berries contained eighty to ninety milligrams of vitamin C in 100 grams. With so high a vitamin content, even the small quantities of jam that are spread on bread would add worthwhile amounts of ascorbic acid to the day's food supply.

New Hampshire-grown wild blueberries—tested by the state experiment station—contained a fair supply of vitamin C if eaten raw, a little less than canned tomato juice. In Hawaii, papayas were found relatively high in ascorbic acid. Mangoes varied with the variety—some were excellent, others about equal to canned tomato juice.

The Hawaiian station recommended peanuts for thiamine as well as for the high quality of their protein. The Arizona station found two varieties of pecan high in thiamine, but poor in riboflavin. Wild rice is a good source of several B vitamins—thiamine, riboflavin, nicotine acid and pantothenic acid, according to the Minnesota experiment station. The Massachusetts station found ordinary field mushrooms, *Agaricus campestris*, also rich in these four B vitamins.

F. S. AND H. JONES are starting a retail nursery business at Royal Oak, Mich. They plan to open in spring as the Northfield Nursery.

ALEX TUSCHINSKY, of the Hillside Landscape Co., Indianapolis, Ind., returned early from his hay fever refuge in the north, with Mrs. Tuschinsky, in order to accompany their son, Teddie, to San Antonio, Tex., where he is enrolled in the Texas Military Academy.

## HYPONEX PLANT FOOD

### Grows Superior Plants in Poorest Soil Sand, Cinders or Water

Used by florists, farmers and gardeners for:

**FEEDING**—flowers, vegetables, lawn and trees.  
**TOP DRESSING**—soluble—plants absorb it quickly.  
**SEED GERMINATION**—helps to prevent damping-off.  
**CUTTINGS**—keeps succulent until transplanted.  
**TRANSPLANTING**—helps reduce shock and wilting.

This clean, odorless powder produces stronger root system with more feeding branches; greater substance in stems, more and larger flowers or fruit. Does not burn roots or foliage when used in solution form as directed.

Sell **HYPONEX** to your customers for their gardens and house plants. Nationally advertised.

1-oz. pkg. retails 10¢—packed 72 to case.  
3-oz. can retails 25¢—packed 36 to case.  
1-lb. can retails \$1.00—packed 12 to case.

Also in 10, 25, 50 and 100-lb. drums.  
Write jobber or us for dealer and grower prices.  
Buy from your jobber or send 10¢ for 1-oz. sample (makes 8 gallons) or \$1.00 for 1 lb. (makes 100 gallons). Dollar credited on first order for 1 case for resale or drum for your own use.

**HYDROPONIC CHEMICAL CO., INC.**  
315 West 39th Street  
New York 18, N. Y.

### IT COSTS NO MORE (and in most instances less)

### FOR OUR PACKING OF Nursery Burlap Squares and Rolls

Write for prices and samples.

**L. ATKIN'S SONS**  
P. O. Box 167 Rochester, N. Y.

## RAFFIA

**MADAGASCAR in A.A.**  
**Westcoast and X. X. Superior**  
**CONGO and CONGO SUPERIOR**

Also  
**GOODRICH BUDDING STRIPS**

Write for prices.

**THOMAS B. MEEHAN CO.**  
Dresher, Pa.

## GENUINE MOSS PEAT

Hydraulic pressed bales and smaller resale packages. Sphagnum Moss, Cultivated Peat Humus.

Shipped from Northern plant at Floodwood, Minn., and Hanlontown, Iowa. Annual capacity 1,000 carloads.

Now booking for present and future deliveries.

Write or wire for quotations.

**Colby Pioneer Peat Co., Inc.**  
Hanlontown, Iowa



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ELYRIA, OHIO

Immediate shipment on plain labels up to 25,000. Write for price list.

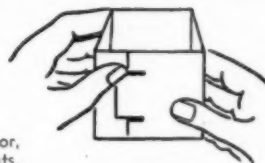
**MARKHAM'S OHIO NURSERY, Elyria, Ohio**

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Grow All Your Plants, Seeds and Cuttings This Modern Way

This modern method of culture saves time and labor, and assures the highest yield in cut flowers, potted plants, perennials, nursery stock, etc. Saves losses at transplanting time by avoiding a check to root systems. Buy now for immediate use and for stock on hand.



## SIX SIZES FOR ALL TYPES OF GROWING SIZES AND PRICES

CAT.	Size in inches	Weight per 1000	Per 1000
No. M-310	1 3/4 x 1 3/4 x 2 1/2	12 lbs.	\$2.95
No. M-320	2 x 2 x 2 1/2	15 lbs.	3.30
No. M-340	2 1/2 x 2 1/2 x 3	20 lbs.	3.75
No. M-350	3 x 3 x 3	21 lbs.	4.10
No. M-360	3 x 3 x 4	32 lbs.	4.75
No. M-391	4 x 4 x 4	40 lbs.	5.60

Packed 1000 to the carton.

We do not break the cartons.

## LIGHT-WOOD FLATS FOR ALL-SIZE BANDS

For handling and shipping our 1 3/4-inch and 2-inch sizes of Plant Bands.

	Per 100		Per 100
M-370; holds twelve 1 3/4-inch Bands.....	\$2.75	M-393; holds six 3-inch Bands.....	\$3.85
M-390; holds twelve 2-inch Bands.....	3.30	M-394; holds six 4-inch Bands.....	3.95
M-392; holds twelve 2 1/2-inch Bands.....	3.75		

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OF THE PROBLEM

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● NURSERYMEN KNOW that it's what goes on *below* the surface that counts. Healthy roots make healthy plants. Cut down transplanting losses by soaking soil around the roots with TRANSPANTONE solution or soak bare-root plants overnight in a barrel of the solution before replanting.

TRANSPANTONE, the plant hormone, reduces wilting and starts active growth *sooner* after the shock of transplanting.

Treat broad and narrow-leaf evergreens, deciduous trees and shrubs with TRANSPANTONE solution and get a strong, healthy growth right through the season. The treatment will not interfere with proper hardening of the wood before winter.

A 3-oz. can of TRANSPANTONE costs \$1.00

A 1-lb. can of TRANSPANTONE costs \$4.00

One pound makes 160 gallons of transplanting solution for treatment of trees and shrubs or 1600 gallons of solution for seedlings and soft-tissued plants.

Write today for our special proposition to nurserymen.

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Horticultural Division AMBLER, PENNA.

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**TRANSPANTONE**



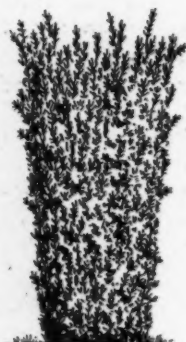
# HILL'S YEWS FOR LINING OUT



Upright Japanese Yew



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Spreading Japanese Yew

The demand for Yews throughout the middle west continues strong with every indication that these trees are going to prove among the most popular ornamental stock in the future.

The Yews have been an important item with us for many years and we are now in position to furnish a choice assortment of leading popular and hardy types in good lining-out grades as follows:

<i>Taxus cuspidata capitata</i> (Upright Japanese Yew)	Each per 100	Each per 1000
6 to 8-inch, xx frames.....	\$0.33	\$0.30
8 to 10-inch, xx frames.....	.38	.35
<i>Taxus cuspidata spreading</i> (Spreading Japanese Yew)		
8 to 10-inch, xx frames.....	.38	.35
10 to 12-inch, xx frames.....	.43	.40
12 to 15-inch, xx frames.....	.53	.50
<i>Taxus cuspidata browni</i> (Brown's Yew)		
10 to 12-inch, xx frames.....	.43	.40
<i>Taxus cuspidata hatfieldi</i> (Hatfield Yew)		
8 to 10-inch, xx frames.....	.38	.35
<i>Taxus cuspidata nana pyramidalis hilli</i> (Hill Pyramidal Yew)		
8 to 10-inch, xx frames.....	.38	.35
<i>Taxus cuspidata wardi</i> (Ward's Yew)		
8 to 10-inch, xx frames.....	.38	.35
<i>Taxus media</i> , No. 1		
8 to 10-inch, xx frames.....	.38	.35
<i>Taxus media hicksi</i> (Hick's Yew)		
8 to 10-inch, xx frames.....	.30	.27

Drop us a line if you do not have our wholesale catalog and our dealer's descriptive catalog.

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 EVERGREEN SPECIALISTS — LARGEST GROWERS IN AMERICA  
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